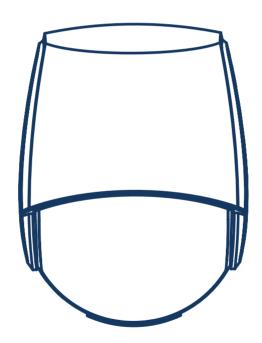
# LZR®-WIDESCAN

OPENING, PRESENCE & SAFETY\* SENSOR FOR INDUSTRIAL DOORS

Download the LZR WIDESCAN installation app!







User's Guide for software version SW 0400 and higher (refer to tracking label on product)





# **INSTALLATION & MAINTENANCE TIPS**



Avoid extreme vibrations.



Do not cover the laser window screens.



Avoid moving objects in the detection field.



Avoid exposure to sudden and extreme temperature changes.



Keep the protection film during the mounting of the sensor. Remove it before launching a teach-in.



Wipe the laser window with a soft, clean and damp microfibre cloth. We recommend using optical lens cleaner.



Do not use aggressive products or dry towels to clean the optical parts.



Avoid direct exposure to high pressure cleaning.

#### **SAFETY PRECAUTIONS**



The device emits invisible (IR) and visible laser radiations. The visible laser beams can be activated during the installation process to adjust precisely the position of the detection field.

The visible laser beams are inactive during normal functioning.

Do not stare directly into the visible laser beams.



#### CAUTION!

Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



Do not stare directly into the visible laser beams.



The metal base on which the sensor is mounted, must be correctly earthed.



Only trained and qualified personnel may install and setup the sensor.



Always test the good functioning of the installation before leaving the premises.



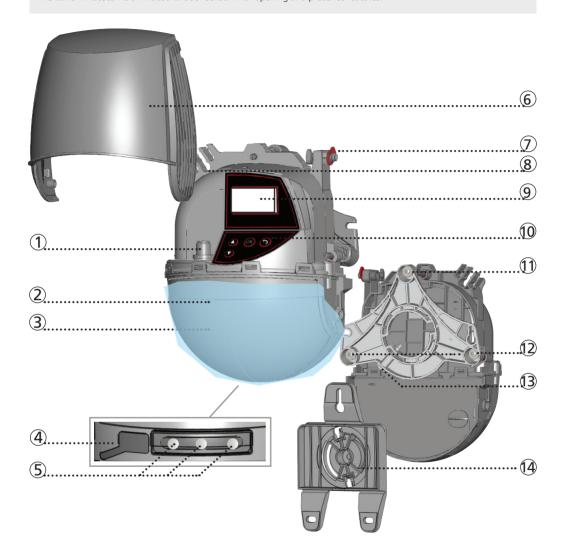
The warranty is invalid if unauthorized repairs are made or attempted by unauthorized personnel.



- The device cannot be used for purposes other than its intended use. All other uses cannot be guaranteed by the manufacturer of the sensor.
- The manufacturer of the door system is responsible for installing the sensor and the door system in compliance with applicable national and international regulations.
- The manufacturer of the sensor cannot be held responsible for incorrect installations or inappropriate
  adjustments of the sensor.

# DESCRIPTION

The LZR®-Widescan is an industrial door sensor with opening and presence features.

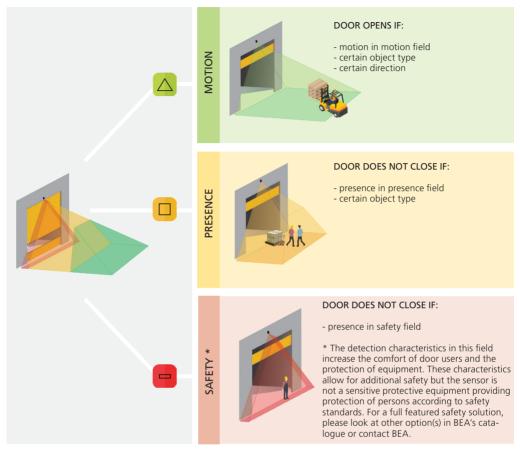


- 1. main connector
- 2. protection film
- 3. laser window
- 4. USB cap
- 5. LED-display
- 6. cover
- 7. cover lock
- 8. cable passage

- 9. LCD-screen
- 10. keypad
- 11. tilt angle adjustment screw (1x)
- 12. parallel angle adjustment screw (2x)
- 13. lateral angle lock screw (1x)
- 14. mounting bracket

# **BASIC PRINCIPLES: FUNCTIONS & OBJECT**

There are 3 main functions that create 3 overlapping detection fields with certain detection characteristics each:



There are 4 additional functions. All detection functions can be combined to trigger a specific output (see output functions on page 16).

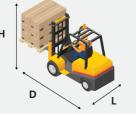
Motion +: assignation of an other moving object type for the motion field

Virtual pull cord: detection of an object standing still in a learned pull cord zone

>> Speed: detection of an object moving below a defined speed

Height: presence detection of an object exceeding a defined height

The sensor carries out a 3D-object analysis and detects depending on the following characteristics: height, width & depth.





# LED-SIGNAL







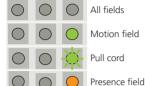


LED flashes quickly

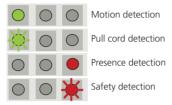




#### SETTINGS



#### **DETECTION**



#### **GENERAL**



# **SYMBOLS**



Factory value

Safety field



Important!



Good to know

MAIN FUNCTIONS:



Motion





ADDITIONAL FUNCTIONS:



Motion +

Pullcord



Speed



Height

#### **OPENING THE SENSOR**



Before opening the sensor, make sure the cover is **not locked** (red cover lock).



To open the top cover, pull both flags while tilting the cover away from its initial position.



If needed, remove the cover completely before installing the sensor.

# HOW TO ADJUST THE SENSOR BY REMOTE CONTROL











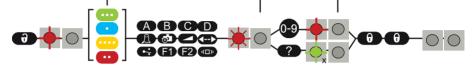




After unlocking, the red LED flashes and the sensor can be adjusted by remote control.

If the red LED flashes quickly after unlocking, enter an access code from 1 to 4 digits. If you do not know the access code, cut and restore the power supply. During 1 minute, you can access the sensor without any code.

To end an adjustment session, always lock the



If necessary, select first the corresponding detection field before pushing on the parameter and changing the value. The second LED indicates the detection field. x = number of flashes = value of the parameter



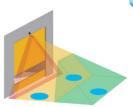


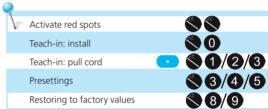
PULL CORD



**PRESENCE** 







#### HOW TO ADJUST THE SENSOR BY LCD



SHORT

Enter the LCD-menu. Select a folder, parameter or value. Confirm a value and exit edit mode.



Select to return to previous menu or display.



Activate red spots on floor.



Scroll up or down the menu items or values.



Launch CENTRE TOOL for correct positioning of detection field (see p. 8).



Select your Language before entering the first LCD-menu.

During the first 30 seconds after power-on of the sensor or later in the diagnostics menu.



Enter a **Password** if necessary. «Specific» menu password: 1234



Select More to access advanced adjustments.



Select **Diagnostics** to go to the diagnostics menu



Displayed value = factory value



Displayed value = saved value

# 1a MOUNTING & WIRING



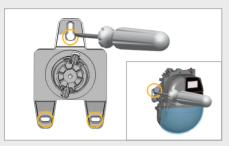
Mounting height: as high as possible in acc. to the limitations in the Technical specifications. The size of the detection field depends on the mounting height.

Mounting position: **centre of door or upper left corner.**Mounting on the right side of the door should be avoided.





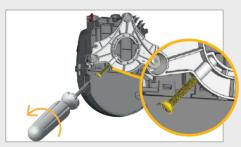
#### The UNIVERSAL MOUNTING BRACKET can be used if the environment requires it.



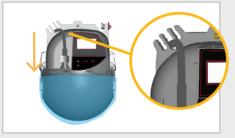
Screw the mounting bracket on the wall. You can also install the sensor directly without using the mounting bracket.



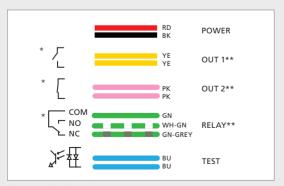
Position the sensor on the mounting bracket and turn as shown to click into place.



Unscrew the angle lock screw if necessary.



Plug the connector and pass the cable through the cable passage without making a loop.



#### Connect the wires.

- \*\*The output functions can be configured if necessary, see p. 16.
- \* Ouput status when in non detection.



# 1b POSITIONING OF DETECTION FIELD

First of all, remove the blue protection film from the laser window.

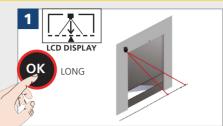


If the sensor is mounted **in the center of the door**, follow steps **1 3 4** and **6** to adjust the field.

If the sensor is mounted **on the left (or right side\*)**, follow all steps described on this page.

\* Note that right side mounting could alter the performance of the motion detection

PARALLEL ANGLE



Push long on OK to enter the CENTRE-TOOL and activate the visible spots.



Rotate the sensor in order to align the centre of the red spots with the centre of the door.



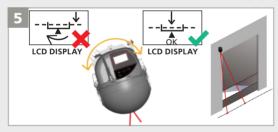


Make sure the curtain is **parallel** to the door by adjusting one or both screws on the side.



Position the curtain **closer to or further away** from the door by turning the screw at the top. Push OK to confirm.

# ATERAL ANGLE



Look at the CENTER-TOOL on the LCD display. Rotate the sensor until both arrows on the LCD screen are aligned. The visible spots must now be off-center for the detection field to cover the whole door symmetrically!



Carefully lock the sensor position by firmly fastening the angle lock screw. Make sure the red spots have not moved.
Push OK to exit and deactivate the visible spots.

#### 1c CLOSING THE SENSOR



- 1. Slightly spread the cover and clip it horizontally.
- 2. Close the cover.

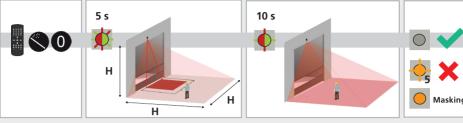


Lock the cover by turning the lock screw clockwise.

#### **TEACH-IN: INSTALL**



- Make sure the blue protection film is removed and the sensor is closed!
- Make sure the laser window is free from dust and/or water drops.
- The teach-in zone (square in front of the 2 visible spots) must be empty and even. If not, see troubleshooting.
- This teach-in must be launched each time a sensor's position/orientation has been changed.



Launch a teach-in by remote control. The teach-in starts after 5 seconds. The teach-in zone must be empty and even!

Wait while position, angle and height are learned and the background is analysed.

The teach-in is finished If not ok see troubleshooting.

#### **PRESETTINGS**

Choose one of the following presettings. They adjust a number of parameters automatically according to your application. If necessary, you can also adjust a parameter independently via remote control (see p. 10). (Bold = differs from factory settings)

#### **STANDARD**



- open space
- traffic from and to all directions
- storage right and/or left



field width: max, field stop: max object type: **vehicle** direction: **uni CTR +** 



field width: max, field stop: 3 m object type: **vehicle** max presence time: 30 min



field width: max, field stop: 0.4 m (infinite detection for objects > 25 cm)

OUT1

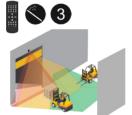
motion or pull cord

оит2 presence or safety

REL

presence + height

#### CORRIDOR



- confined space
- traffic from and to all directions
- no storage



field width: max, field stop: max object type: vehicle direction: uni CTR



field width: max, field stop: 2 m object type: vehicle max presence time: infinite



field width: max, field stop: 0.4 m (infinite detection for objects > 25 cm)

OUT1

motion or pull cord or safety

OUT2

presence or safety

REL

speed triager

#### CORNER







- corner
- no parallel traffic
- storage right and/or left



field width: max, field stop: max object type: vehicle direction: uni



field width: max, field stop: 3 m object type: vehicle max presence time: 30 min



field width: max, field stop: 0.4m (infinite detection for objects > 25 cm)

OUT1

motion or pull cord or presence

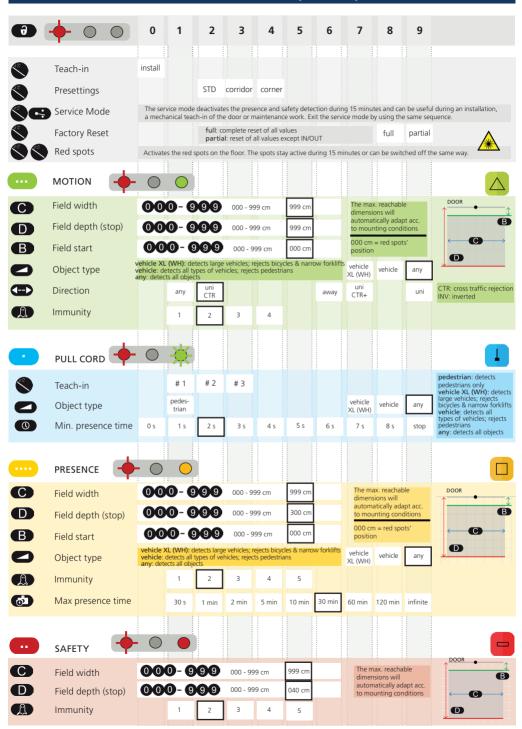
OUT2

presence or safety

RFI

presence + height

# **OVERVIEW OF REMOTE CONTROL SETTINGS (OPTIONAL)**



#### **OVERVIEW OF REMOTE CONTROL SETTINGS (OPTIONAL)** 0 2 9 3 5 mot or not/pull/ mot/pull/ pull motion+ motion+ motion+ Out 1 Function motion OUT1 OUT2 REL change pull safe pres cord & height & speed no pres/ presence presence safety **630**0 Out 2 Function change safety & height nο pres Relay Function motion pull cord presence safety motion+ height speed pres change safety & heiaht Entering 0 keeps the value unchanged. Always enter 3 digits for output parameters: freq 100 Hz\*\* - 1st digit refers to output 1 no NO NC Out 1 Logic\* change - 2nd to output 2 - 3rd to the relay Out 2 Logic\* NO NC PWM change See p. 16 for more info on no output functions. Relay Logic\* passive active change Out 1 Holdtime 100 ms 3 5 5 5 10 s 30 s 1 min 10 min 20 min Out 2 Holdtime 100 ms 1 s 3 5 5 5 10 s 30 s 1 min 5 min 10 min 20 min Relay Holdtime 100 ms 3 s 5 s 10 s 30 s 1 min 5 min 10 min 20 min \* output status when in non detection **FACTORY VALUES** \*\* during non-detection To save an access code via the remote control: To delete an access code via the remote control: 0-9:0-9:0-9:0-9 Enter the existing code A Field shift : (Always verify the detection area 40cm 30 30 40 cm after changing this parameter) Without selecting a colour key, you adjust the width of all 3 detection fields (motion, presence & safety) at the same time. Heating function via LCD: Quick Start > More > Heating

Choose **AUTO** to continuously remove condensation on the laser window (higher power consumption).

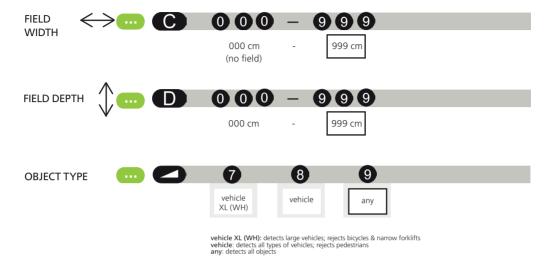
QR-code via LCD: Diagnostics > QR-code

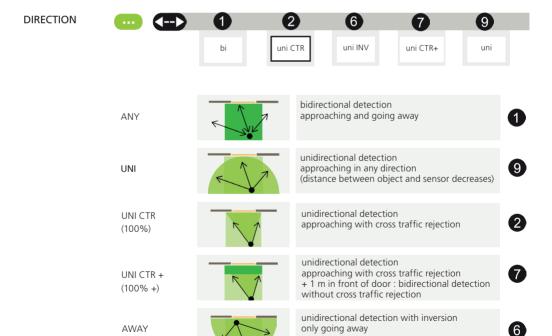
To quickly send an overview of all selected values, scan the QR-code on the LCD-screen using your smartphone scanner app. If needed use the flashlight of your phone to improve contrast.

A string of digits will be visible on your phone.

Send this string via email to our technical support team.

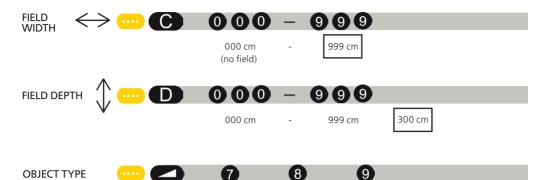






**OBJECT TYPE** 





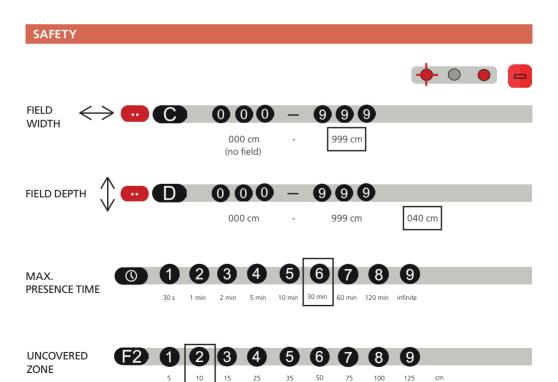
vehicle

XL (WH)

vehicle XL (WH): detects large vehicles; rejects bicycles & narrow forklifts vehicle: detects all types of vehicles; rejects pedestrians any: detects all objects

any

vehicle



35

75

100

cm

#### **VIRTUAL PULL CORD**



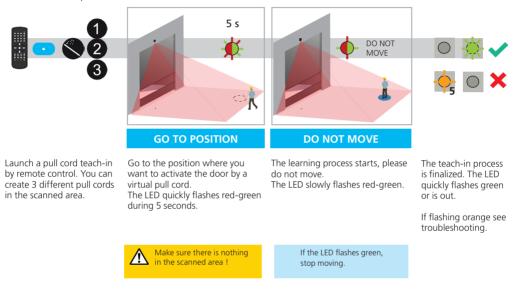


The door only opens when an object is detected in one of the three virtual pull cord zones during the chosen min. presence time (factory value : 2 seconds).

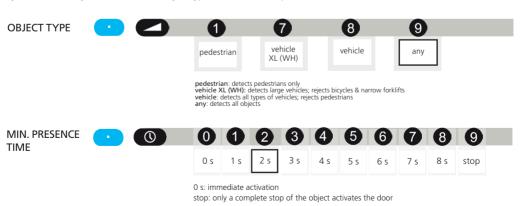
In order to use this function:

- the sensor must know its environment: teach-in install is OK.
- the corresponding wires must be connected to the door activation input (out 1 by default)
- the output or relay function must be set to motion or pull cord (factory value) or pull cord.

#### To create a virtual pullcord:



By remote control you can choose the object type and its minimum presence time to activate the door:



To delete the virtual pull cord zone, simply relaunch a pull cord teach-in without standing in the scanning zone.

After 1 minute the sensor flashes 5x orange. Push unlock + lock to exit the adjustment mode:

# **HEIGHT TRIGGER**

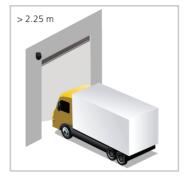
All objects higher than 2.25 m will activate the selected output.



This option is typically used to open the door completely or partially depending on the height of the object. The wiring and logic of the output configuration are related to the door controller.



The door opens partially



The door opens completely (height detection - relay)

You can adjust the minimum height limit via LCD: Others > Height min. (1.75 - 4 m)

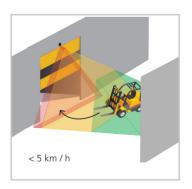
#### **SPEED TRIGGER**

(motion detection - out 1)

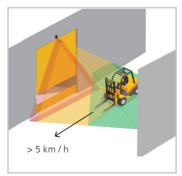
All objects moving slower than 5 km/h will activate the selected output.



This option is typically used in confined areas with no frontal traffic and is included in the presetting «corridor».

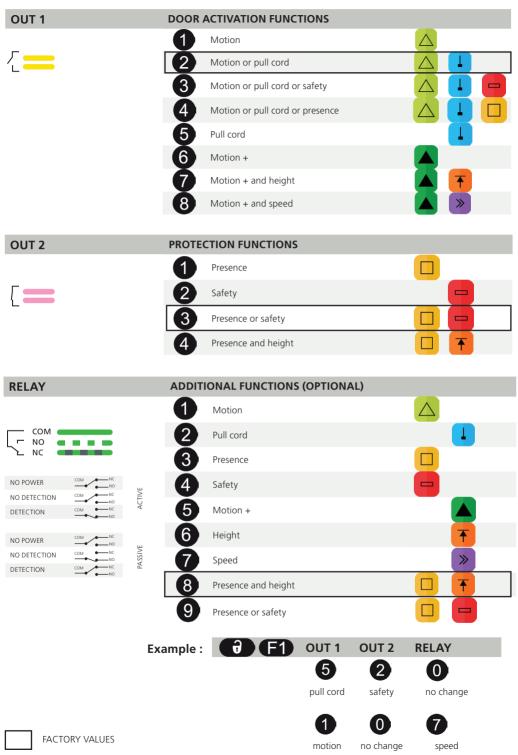






The door stays closed.

You can adjust the maximum speed limit via LCD: Others > Speed max. (5 - 50km/h)



# CHOSEN SETTINGS

	MOVEMENT Field width Field depth (stop) Field start Object type Direction Immunity	DATE: LOCATION:INSTALLER:	LOCATION :	DATE:
	PULL CORD			
	Teach-in Object type Min. presence time			
••••	PRESENCE			
(C) (D) (B) (A) (A) (6)	Field width Field depth (stop) Field start Object type Immunity Max presence time			
•	SAFETY			
	Field width Field depth (stop) Immunity			
	Out 1 Function Out 2 Function Relay Function			

NOTES	

# TROUBLESHOOTING

E1	<b>\</b>	E1: CPU-XXX	The sensor encounters an internal problem.	!	Replace sensor.
E2	2	E2: XXX PWR	The internal power supply is faulty.	!	Replace sensor.
	_	E2: IN SUPPLY	The power supply is too low or too high.	1	Verify power supply > Diagnostics - LCD.
		E2: TEMP	The internal temperature is too low or too high.	1 2	Verify the sensor temperature > Diagnostics - LCD.  Protect the sensor from direct exposure to heat
F.4	_	E.A. EDONIT NANCIZING		_	or cold.
E4	4	E4: FRONT MASKING door remains open for 5 min. at each opening	The sensor might be blinded	1 2	Clean the front face Remove masking object
E5	<b>4</b> 5		The sensor requests a teach-in.	1 2	Launch teach-in after angle adjustment. All presence/safety-outputs are activated.
		E5: FLATNESS	Faulty teach-in.	1 2 3	Make sure the teach-in zone is empty and even. Launch install teach-in:  If zone is clear on the left, select: If zone is clear on the right, select:
		E5: TILT	Faulty teach-in because of tilt angle.	1 2	Adjust tilt angle (max. 15° > Diagnostics - LCD). Launch install teach-in.
		E5: AZIMUTH	Faulty teach-in because of lateral angle.	1	Adjust lateral angle (max. 45° > Diagnostics - LCD) Launch install teach-in.
		E5: HEIGHT	Faulty teach-in because of mounting height.	1 2	Adjust mounting height (max. 6 m, min. 2 m) Launch install teach-in.
		E5: TIME-OUT	Faulty teach-in because of movement in the detection field.	1	Launch install teach-in. Make sure there is no motion detection during at least 5 seconds when the LED starts flashing red-green. Slightly change your position and relaunch install teach-in.
<b>E</b> 6	<b>\</b>	E6: FQ OUT	Faulty sensor output 1.	!	Replace sensor.
E8	8	E8:	Faulty detection engine.	1	If temperature is lower than -20°C, wait until the heating process is completed. If not, replace sensor.
		ORANGE LED is on.	The sensor encounters a memory problem	ļ.	Replace sensor.
		ORANGE LED is on during 3 sec. (masking)	Sensor placed in a corner and perpendicular to a wall	1	Tilt the sensor to shift the detection field
			Masking: obstacle high up in front of the door	2 1	Reduce the number of curtains by LCD (Quick start > More > Nb curtains).
		The LED and the LCD-display are off.		1	Check wiring. Check pinning and connection on sensor side.
		The door does not react.	The service mode is activated.	1	Exit the service mode (see p. 10)
		The product does not react to the remote control.	The sensor is protected by a password.	1	Enter the right password. If you forgot the code, cut and restore the power supply to access the sensor without entering a password during 1min.
		The motion detection starts too late.	The sensor has a big negative angle.		Reduce the angle of the sensor.

# TECHNICAL SPECIFICATIONS

Technology	LASER scanner, time-of-flight measurement (7 laser curtains)				
Detection mode	Motion, presence, height and speed				
Max. detection field	Width: 1 x mounting height; Depth: 1 x mounting height				
Thickness of first curtain	0.5 cm / m (mounting height)				
Mounting height	2 m to 10 m				
Min. reflectivity factor	> 2 % (of floor and object) (measured at max. 6 m in safety field)				
Min. object size	70 cm x 30 cm x 20 cm				
Emission characteristics (IEC 60825-1)	IR LASER: Wavelength 905 nm; output power <0.1 mW; Class 1 Visible LASER: Wavelength 635 nm; output power <1 mW; Class 2				
Bluetooth communication	Operating bandwidth: 2402 MHz – 2480 MHz Maximum transmitted power: 12 dBm				
Supply voltage	12 V - 24 V AC -10%/+20%; 12 V - 30 V DC -10%/+20% @ sensor terminal (The Equipment must be powered by an approved Class II SELV limited power source. This requiremen consists of the need for double insulation between primary voltages and the Equipment supply. The supply current should be limited to 1.5 A)				
Power consumption	heating off: < 2.5 W heating auto: typ. < 10 W, max. 15 W				
Response time	Typ. 230 ms; max. 800 ms (depending on immunity settings)				
Output	2 solid-state relays (galvanic isolation - polarity free) 24 V AC/ 30 V DC (max. switching voltage) - 100 mA (max. switching current) - in switching mode: NO/NC - in frequency mode: pulsed signal (f= 100 Hz +/- 10%) 1 electro-mechanic relay (galvanic isolation - polarity free) 42 V AC/DC (max. switching voltage) - 500 mA (max. switching current)				
Test input	30 V DC (max. switching voltage) - low < 1 V, high > 10 V (voltage threshold)				
LED-signals 3 coloured LEDs					
Dimensions	159 mm (H) x 208 mm (W) x 127 mm (D)				
Material / Colour PC/ASA / Black					
Rotation angles on bracket					
Tilt angles on bracket	-10° to +5°				
Protection degree	IP65				
	-30 °C to +60 °C				
Temperature range	-50 C (O+00 C				

Specifications are subject to change without prior notice.

All values measured in specific conditions.

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BEA hereby declares that the LZR®-WIDESCAN is in conformity with directives RED 2014/53/EU and RoHS2 2011/65/EU.

The complete declaration of conformity is available on our website.

This product should be disposed of separately from unsorted municipal waste

