

Technical data sheet Stationary bar code reader

Part no.: 50143210

BCL 208i R1M 110



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- Diagrams
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Ethernet



For illustration purposes only

Technical data

Basic data

| | |
|--------|----------|
| Series | BCL 200i |
|--------|----------|

Functions

| | |
|-----------|---------------------------|
| Functions | Alignment mode |
| | AutoConfig |
| | AutoControl |
| | AutoRefIAct |
| | Code fragment technology |
| | LED indicator |
| | Reference code comparison |

Read data

| | |
|---|-----------------------------|
| Code types, readable | 2/5 Interleaved |
| | Codabar |
| | Code 128 |
| | Code 39 |
| | Code 93 |
| | EAN 8/13 |
| | GS1 Databar Expanded |
| | GS1 Databar Limited |
| | GS1 Databar Omnidirectional |
| | UPC |
| Scanning rate, typical | 1,000 scans/s |
| Bar codes per reading gate, max. number | 64 Piece(s) |

Optical data

| | |
|--|---|
| Reading distance | 40 ... 255 mm |
| Light source | Laser, Red |
| Wavelength | 655 nm |
| Laser class | 1, IEC/EN 60825-1:2014 |
| Transmitted-signal shape | Continuous |
| Usable opening angle (reading field opening) | 60 ° |
| Modulus size | 0.2 ... 0.5 mm |
| Reading method | Raster scanner with deflecting mirror |
| Beam deflection | By means of rotating polygon mirror wheel + deflecting mirror |
| Light beam exit | Lateral with deflecting mirror |

Electrical data

| | |
|--------------------|------------------------------|
| Protective circuit | Polarity reversal protection |
|--------------------|------------------------------|

Performance data

| | |
|-------------------------|-----------------|
| Supply voltage U_B | 18 ... 30 V, DC |
| Power consumption, max. | 4 W |

Inputs

| | |
|------------------------------------|------------|
| Number of digital switching inputs | 1 Piece(s) |
|------------------------------------|------------|

Switching inputs

| | |
|---------------------|------|
| Voltage type | DC |
| Input current, max. | 8 mA |

Outputs

| | |
|-------------------------------------|------------|
| Number of digital switching outputs | 1 Piece(s) |
|-------------------------------------|------------|

Switching outputs

| | |
|-------------------------|-------|
| Voltage type | DC |
| Switching current, max. | 60 mA |

Interface

| | |
|------|----------|
| Type | Ethernet |
|------|----------|

Ethernet

| | |
|-----------------------|---------------------------|
| Architecture | Client |
| | Server |
| Address assignment | DHCP |
| | Manual address assignment |
| Transmission speed | 10 Mbit/s |
| | 100 Mbit/s |
| Function | Process |
| Switch functionality | None |
| Transmission protocol | TCP/IP, UDP |

Connection

| | |
|-----------------------|------------|
| Number of connections | 2 Piece(s) |
|-----------------------|------------|

Connection 1

| | |
|----------------------|----------------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| Type of connection | Cable with connector |
| Cable length | 900 mm |
| Sheathing material | PVC |
| Cable color | Black |
| Number of conductors | 5 -wire |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Connection 2

| | |
|----------------------|-------------------------|
| Function | Configuration interface |
| | Data interface |
| Type of connection | Cable with connector |
| Cable length | 700 mm |
| Sheathing material | PVC |
| Cable color | Green |
| Number of conductors | 4 -wire |
| Thread size | M12 |
| Type | Female |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | D-coded |

Mechanical data

| | |
|-----------------------|------------------------------|
| Design | Cubic |
| Dimension (W x H x L) | 93 mm x 38 mm x 83 mm |
| Housing material | Metal |
| Metal housing | Diecast aluminum |
| Lens cover material | Glass |
| Net weight | 400 g |
| Housing color | Silver |
| Type of fastening | Dovetail grooves |
| | Fastening on back |
| | Via optional mounting device |

Technical data

Operation and display

| | |
|-----------------------|-----------------|
| Type of display | LED |
| Number of LEDs | 3 Piece(s) |
| Type of configuration | Via web browser |

Environmental data

| | |
|------------------------------------|---------------|
| Ambient temperature, operation | 0 ... 40 °C |
| Ambient temperature, storage | -20 ... 70 °C |
| Relative humidity (non-condensing) | 0 ... 90 % |

Certifications

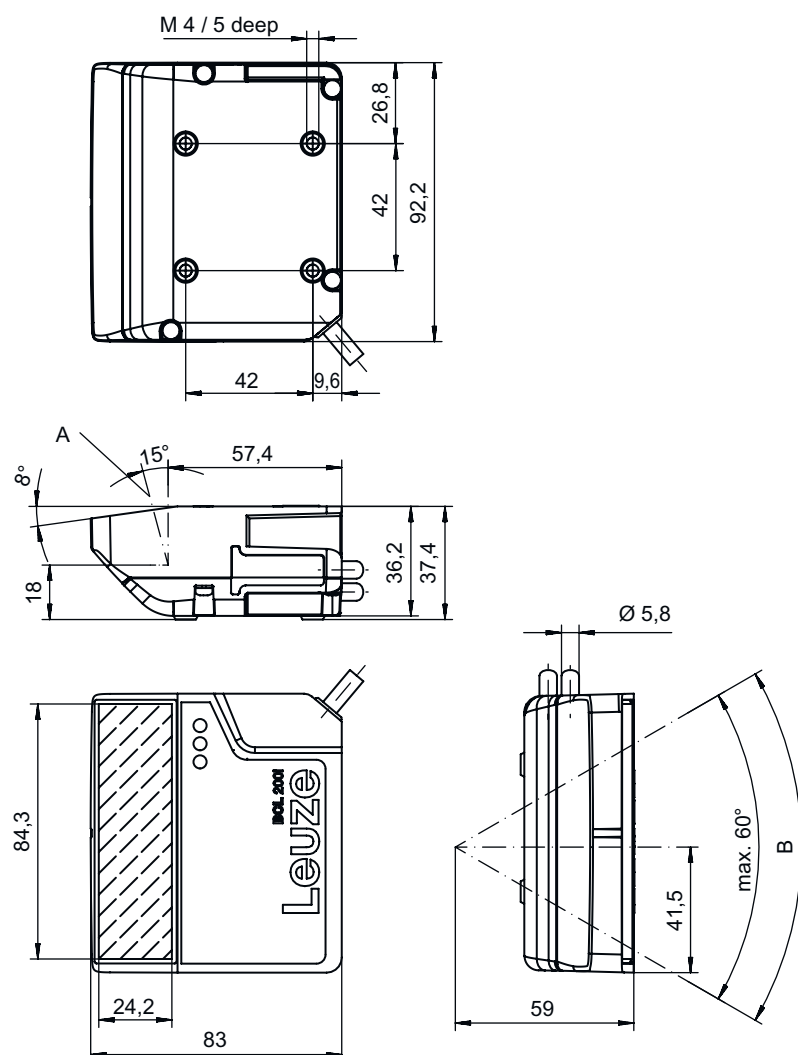
| | |
|---|------------------------------|
| Degree of protection | IP 65 |
| Protection class | III |
| Approvals | c UL US |
| Test procedure for EMC in accordance with standard | EN 61000-6-2 EN 61000-6-3 |
| Test procedure for shock in accordance with standard | IEC 60068-2-27, test Ea |
| Test procedure for continuous shock in accordance with standard | IEC 60068-2-29, test Eb |
| Test procedure for vibration in accordance with standard | IEC 60068-2-6, test Fc |

Classification

| | |
|-----------------------|----------|
| Customs tariff number | 84719000 |
| ECLASS 5.1.4 | 27280102 |
| ECLASS 8.0 | 27280102 |
| ECLASS 9.0 | 27280102 |
| ECLASS 10.0 | 27280102 |
| ECLASS 11.0 | 27280102 |
| ECLASS 12.0 | 27280102 |
| ECLASS 13.0 | 27280102 |
| ECLASS 14.0 | 27280102 |
| ECLASS 15.0 | 27280102 |
| ETIM 5.0 | EC002550 |
| ETIM 6.0 | EC002550 |
| ETIM 7.0 | EC002550 |
| ETIM 8.0 | EC002550 |
| ETIM 9.0 | EC002550 |
| ETIM 10.0 | EC002550 |

Dimensioned drawings

All dimensions in millimeters



- A Optical axis
- B Deflection angle of the laser beam: $\pm 30^\circ$

Electrical connection

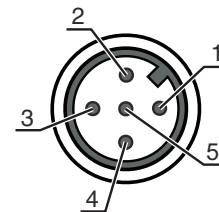
Connection 1

| | |
|----------------------|----------------------|
| Function | Signal IN |
| | Signal OUT |
| | Voltage supply |
| Type of connection | Cable with connector |
| Cable length | 900 mm |
| Sheathing material | PVC |
| Cable color | Black |
| Number of conductors | 5 -wire |
| Thread size | M12 |
| Type | Male |
| Material | Plastic |
| No. of pins | 5 -pin |
| Encoding | A-coded |

Electrical connection

Pin Pin assignment

| | |
|---|--------|
| 1 | VIN |
| 2 | SWIN 1 |
| 3 | GNDIN |
| 4 | SWO 1 |
| 5 | FE |

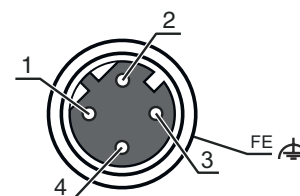


Connection 2

| | |
|-----------------------------|---|
| Function | Configuration interface Data interface |
| Type of connection | Cable with connector |
| Cable length | 700 mm |
| Sheathing material | PVC |
| Cable color | Green |
| Number of conductors | 4 -wire |
| Thread size | M12 |
| Type | Female |
| Material | Plastic |
| No. of pins | 4 -pin |
| Encoding | D-coded |

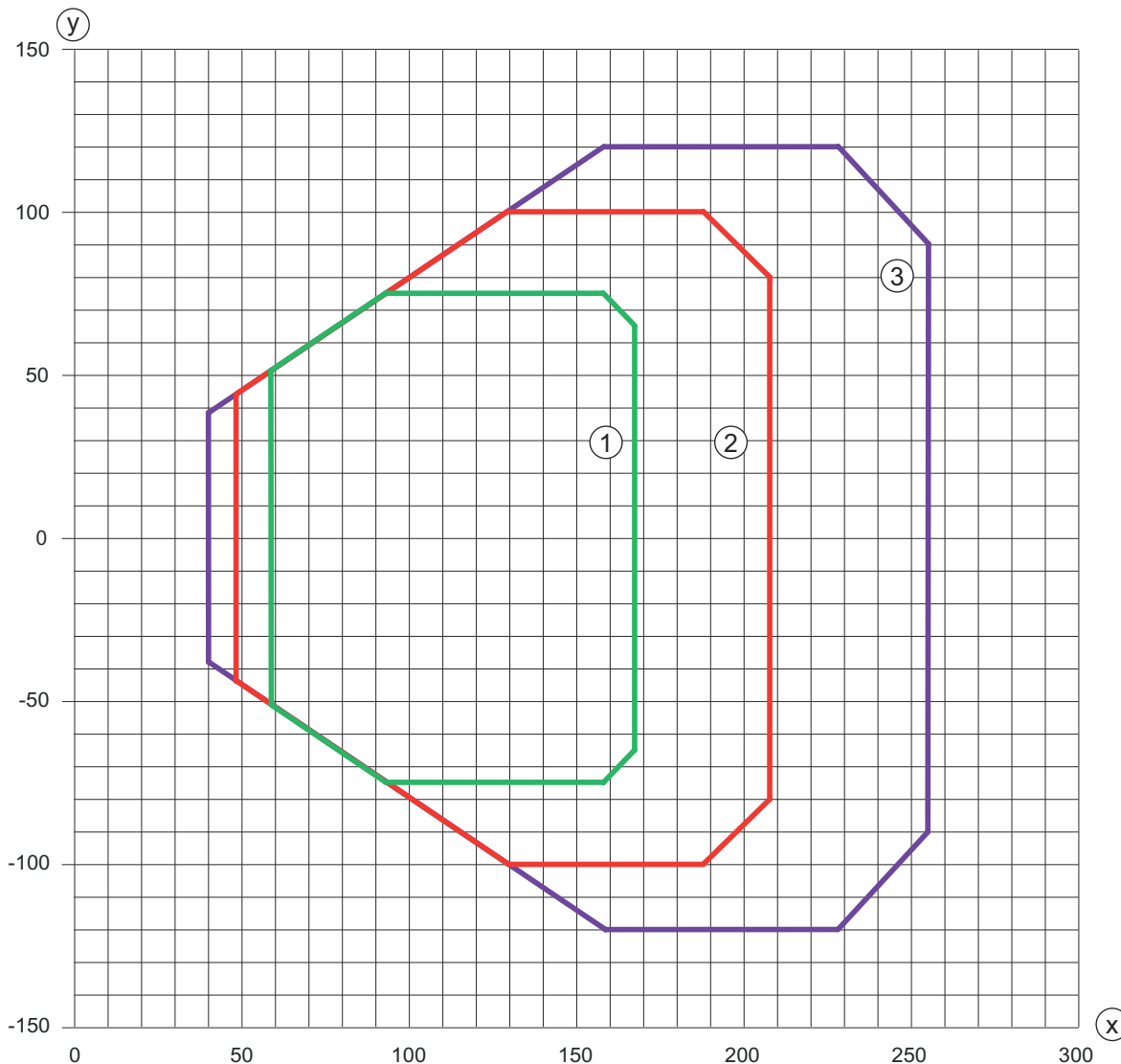
Pin Pin assignment

| | |
|---|------|
| 1 | TD0+ |
| 2 | RD0+ |
| 3 | TD0- |
| 4 | RD0- |



Diagrams

Reading field curve



x Reading distance [mm]
 y Reading field width [mm]

- 1 Module: 0.2 mm
- 2 Module: 0.3 mm
- 3 Module: 0.5 mm

Operation and display

| LED | Display | Meaning |
|-------|---------------------------------------|---------------------------------|
| 1 PWR | Green, flashing | Device ok, initialization phase |
| | Green, continuous light | Device OK |
| | Green, briefly off - on | Reading successful |
| | Green, briefly off - briefly red - on | Reading not successful |
| | Orange, continuous light | Service mode |
| | Red, flashing | Device OK, warning set |
| | Red, continuous light | Error, device error |
| | 2 NET | Green, flashing |
| | Green, continuous light | Bus operation ok |

Operation and display

| LED | Display | Meaning |
|--------|--------------------------|------------------------------------|
| 2 NET | Red, flashing | Communication error |
| | Red, continuous light | Bus error |
| 3 LINK | Green, continuous light | Ethernet connection is established |
| | Yellow, continuous light | Data exchange active |

Part number code

Part designation: **BCL XXXX YYZ AAA**

| | |
|-------------|--|
| BCL | Operating principle BCL: bar code reader |
| XXXX | Series/interface (integrated fieldbus technology) 208i: EtherNet TCP/IP, UDP 248i: PROFINET RT 258i: EtherNet/IP |
| YY | Scanning principle S: line scanner (single line) R1: line scanner (raster) |
| Z | Optics M: Medium Density (medium distance) |
| AAA | Beam exit 110: lateral |

Note

A list with all available device types can be found on the Leuze website at www.leuze.com.

Notes

Observe intended use!

- ⌘ This product is not a safety sensor and is not intended as personnel protection.
- ⌘ The product may only be put into operation by competent persons.
- ⌘ Only use the product in accordance with its intended use.

ATTENTION! LASER RADIATION – CLASS 1 LASER PRODUCT

The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of **laser class 1** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.



- ⌘ Observe the applicable statutory and local laser protection regulations.
- ⌘ The device must not be tampered with and must not be changed in any way. There are no user-serviceable parts inside the device. Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Laser radiation

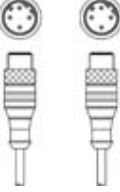
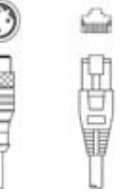
- ⌘ Opening the device may result in hazardous radiation exposure.

Accessories


Connection technology - Connection cables

| | Part no. | Designation | Article | Description |
|---|----------|---------------------|------------------|--|
|  | 50132079 | KD U-M12-5A-V1-050 | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: No Cable length: 5.000 mm Sheathing material: PVC |
|  | 50135074 | KS ET-M12-4A-P7-050 | Connection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR |


Connection technology - Interconnection cables

| | Part no. | Designation | Article | Description |
|---|----------|-----------------------------|-----------------------|--|
|  | 50137078 | KSS ET-M12-4A-M12-4A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: Connector, M12, Axial, Male, D-coded, 4 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |
|  | 50135081 | KSS ET-M12-4A-RJ45-A-P7-050 | Interconnection cable | Suitable for interface: Ethernet Connection 1: Connector, M12, Axial, Male, D-coded, 4 -pin Connection 2: RJ45 Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR |


Mounting technology - Mounting brackets

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------------|---|
|  | 50121433 | BT 300 W | Mounting device | Design of mounting device: Angle, L-shape Fastening, at system: Through-hole mounting Mounting bracket, at device: Screw type Type of mounting device: Adjustable Material: Metal |


Mounting technology - Rod mounts

| | Part no. | Designation | Article | Description |
|---|----------|-------------|-----------------|---|
|  | 50121434 | BT 300 - 1 | Mounting device | Design of mounting device: Mounting system Fastening, at system: For 10-16 mm rods Mounting bracket, at device: Screw type Type of mounting device: Turning, 360°, Adjustable Material: Metal |





Accessories

| | Part no. | Designation | Article | Description |
|--|----------|-------------|-----------------|---|
|  | 50121435 | BT 56 - 1 | Mounting device | Functions: Static applications Design of mounting device: Mounting system Fastening, at system: For 12 mm rod, For 14 mm rod, For 16 mm rod Mounting bracket, at device: Clampable Material: Metal Tightening torque of the clamping jaws: 8 N·m |

Reflective tapes for standard applications

| | Part no. | Designation | Article | Description |
|---|----------|-----------------|-----------------|---|
|  | 50106119 | REF 4-A-100x100 | Reflective tape | Design: Rectangular Reflective surface: 100 mm x 100 mm Material: Plastic Chemical designation of the material: PMMA Fastening: Self-adhesive |

Services

| | Part no. | Designation | Article | Description |
|--|----------|-------------|------------------|---|
|  | S981020 | CS30-E-212 | Hourly rate | Details: Compilation of the application data, selection and suggestion of suitable sensor system, drawing prepared as assembly sketch. Conditions: Completed questionnaire or project specifications with a description of the application have been provided. |
|  | S981014 | CS30-S-110 | Start-up support | Details: Performed at location of customer's choosing, duration: max. 10 hours. Conditions: Devices and connection cables are already mounted, price not including travel costs and, if applicable, accommodation expenses. |
|  | S981019 | CS30-T-110 | Product training | Details: Location and content to be agreed upon, duration: max. 10 hours. Conditions: Price not including travel costs and, if applicable, accommodation expenses. |
|  | S981021 | CS30-V-212 | Hourly rate | Details: REA evaluation with creation of a test report, evaluation of the code quality. Conditions: Original bar codes to be provided by the client. |

Note



A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.