

# Technical data sheet

## Stationary bar code reader

Part no.: 50038949

### BCL 8 SM 102



For illustration purposes only

#### Contents

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- Electrical connection
- Diagrams
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CDRH



UK  
CA

## Technical data

### Basic data

|        |       |
|--------|-------|
| Series | BCL 8 |
|--------|-------|

### Functions

|           |                           |
|-----------|---------------------------|
| Functions | Alignment mode            |
|           | AutoConfig                |
|           | AutoReflAct               |
|           | Daisy Chain               |
|           | I/O                       |
|           | LED indicator             |
|           | Multiple read             |
|           | Output format selectable  |
|           | Reading gate control      |
|           | Reference code comparison |

### Read data

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
| Code types, readable                    | 2/5 Interleaved                          |
|                                         | Codabar                                  |
|                                         | Code 128                                 |
|                                         | Code 39                                  |
|                                         | Code 93                                  |
|                                         | EAN 128                                  |
|                                         | EAN 8/13                                 |
|                                         | EAN Addendum                             |
|                                         | Pharma Code                              |
|                                         | Pharmacode (available upon consultation) |
|                                         | UPC                                      |
| Scanning rate, typical                  | 600 scans/s                              |
| Bar codes per reading gate, max. number | 63 Piece(s)                              |

### Optical data

|                                              |                            |
|----------------------------------------------|----------------------------|
| Reading distance                             | 40 ... 160 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                                 | 0.15 ... 0.5 mm            |
| Reading method                               | Line scanner               |
| Scanning rate                                | 600 scans/s                |
| Beam deflection                              | Via rotating polygon wheel |
| Light beam exit                              | Front                      |

### Electrical data

|                           |                         |
|---------------------------|-------------------------|
| Protective circuit        | Short circuit protected |
| <b>Performance data</b>   |                         |
| Supply voltage $U_B$      | 4.75 ... 5.5 V, DC      |
| Current consumption, max. | 250 mA                  |

### Inputs/outputs selectable

|                                     |                  |
|-------------------------------------|------------------|
| Output current, max.                | 20 mA            |
| Number of inputs/outputs selectable | 1 Piece(s)       |
| Voltage type, outputs               | DC               |
| Switching voltage, outputs          | Typ. $U_B$ / 0 V |
| Voltage type, inputs                | DC               |
| Switching voltage, inputs           | Max. 24 V DC     |
|                                     | Typ. $U_B$ / 0 V |
| Input current, max.                 | 20 mA            |

### Input/output 1

|          |                     |
|----------|---------------------|
| Function | Freely configurable |
|----------|---------------------|

### Interface

|      |        |
|------|--------|
| Type | RS 232 |
|------|--------|

### RS 232

|                       |                     |
|-----------------------|---------------------|
| Function              | Process             |
| Transmission speed    | 4,800 ... 57,600 Bd |
| Data format           | Adjustable          |
| Start bit             | 1                   |
| Data bit              | 7,8                 |
| Stop bit              | 1.2                 |
| Parity                | Adjustable          |
| Transmission protocol | Adjustable          |
| Data encoding         | ASCII               |
|                       | HEX                 |

### Service interface

|      |        |
|------|--------|
| Type | RS 232 |
|------|--------|

### RS 232

|          |         |
|----------|---------|
| Function | Service |
|----------|---------|

### Connection

|                       |            |
|-----------------------|------------|
| Number of connections | 1 Piece(s) |
|-----------------------|------------|

### Connection 1

|                    |                   |
|--------------------|-------------------|
| Function           | Data interface    |
|                    | PWR / SW IN / OUT |
| Type of connection | Connector         |
| Thread size        | M12               |
| Type               | Male              |
| Material           | Metal             |
| No. of pins        | 5 -pin            |
| Encoding           | A-coded           |

### Mechanical data

|                       |                              |
|-----------------------|------------------------------|
| Design                | Cubic                        |
| Dimension (W x H x L) | 40.3 mm x 48 mm x 15 mm      |
| Housing material      | Metal                        |
| Metal housing         | Zinc                         |
| Lens cover material   | Glass                        |
| Net weight            | 120 g                        |
| Housing color         | Silver                       |
| Type of fastening     | Dovetail grooves             |
|                       | Mounting thread              |
|                       | Through-hole mounting        |
|                       | Via optional mounting device |

## Technical data

### Operation and display

|                 |            |
|-----------------|------------|
| Type of display | LED        |
| Number of LEDs  | 2 Piece(s) |

### Environmental data

|                                    |               |
|------------------------------------|---------------|
| Ambient temperature, operation     | 0 ... 40 °C   |
| Ambient temperature, storage       | -20 ... 60 °C |
| Relative humidity (non-condensing) | 0 ... 90 %    |

### Certifications

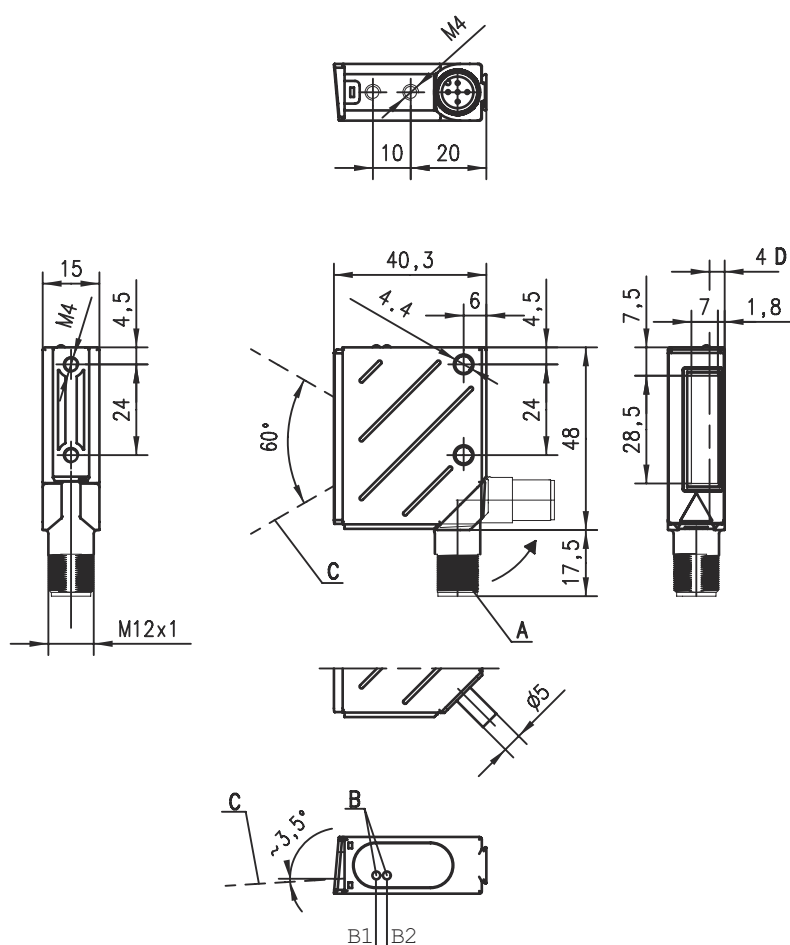
|                                                          |                         |
|----------------------------------------------------------|-------------------------|
| Degree of protection                                     | IP 67                   |
| Protection class                                         | III                     |
| Approvals                                                | c UL US                 |
| Test procedure for EMC in accordance with standard       | EN 61000-6-2, -3        |
| Test procedure for shock in accordance with standard     | IEC 60068-2-27, test Ea |
| Test procedure for vibration in accordance with standard | IEC 60068-2-6, test Fc  |
| US patents                                               | US 6,735,007 B          |

### 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



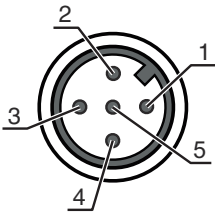
- A Turning connector, turnable by 90°
- B1 Status LED
- B2 Decode LED
- C Laser beam
- D Optical axis

Electrical connection

Connection 1

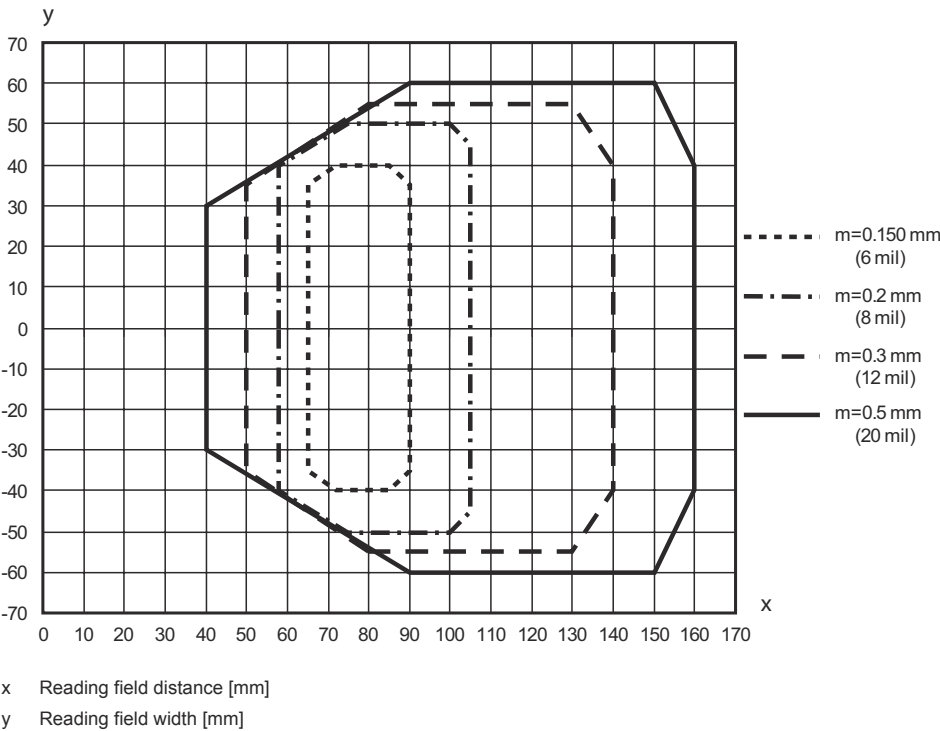
|                    |                   |
|--------------------|-------------------|
| Function           | Data interface    |
|                    | PWR / SW IN / OUT |
| Type of connection | Connector         |
| Thread size        | M12               |
| Type               | Male              |
| Material           | Metal             |
| No. of pins        | 5 -pin            |
| Encoding           | A-coded           |

| Pin | Pin assignment |
|-----|----------------|
| 1   | +5 V DC        |
| 2   | RS 232 TxD     |
| 3   | GND            |
| 4   | RS 232 RxD     |
| 5   | SW IN/OUT      |



Diagrams

Reading field curve



Operation and display

| LED | Display                 | Meaning                         |
|-----|-------------------------|---------------------------------|
| 1   | Green, flashing         | Device ok, initialization phase |
|     | Green, continuous light | Operational readiness           |
|     | Red, flashing           | Device OK, warning set          |
|     | Red, continuous light   | Device error                    |

# Operation and display

| LED | Display                  | Meaning             |
|-----|--------------------------|---------------------|
| 1   | Orange, flashing         | Service operation   |
| 2   | Green, continuous light  | Reading successful  |
|     | Red, continuous light    | No reading result   |
|     | Orange, continuous light | Reading gate active |

## Notes

|  <b>Observe intended use!</b> |                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | <ul style="list-style-type: none"> <li>⚡ This product is not a safety sensor and is not intended as personnel protection.</li> <li>⚡ The product may only be put into operation by competent persons.</li> <li>⚡ Only use the product in accordance with its intended use.</li> </ul> |

|  <b>For UL applications:</b> |                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                               | <ul style="list-style-type: none"> <li>⚡ For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).</li> </ul> |

|  <b>ATTENTION! LASER RADIATION – CLASS 1 LASER PRODUCT</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             | <p>The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of <b>laser class 1</b> 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.</p> <ul style="list-style-type: none"> <li>⚡ Observe the applicable statutory and local laser protection regulations.</li> <li>⚡ The device must not be tampered with and must not be changed in any way.</li> </ul> <p>There are no user-serviceable parts inside the device.<br/>Repairs must only be performed by Leuze electronic GmbH + Co. KG.</p> |

## Accessories

### Connection technology - Connection unit

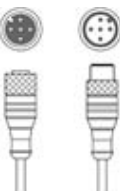
|                                                                                    | Part no. | Designation | Article                 | Description                                                                                                                                    |
|------------------------------------------------------------------------------------|----------|-------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50104790 | MA 8-01     | Modular connection unit | Supply voltage: 10 ... 30 V<br>Current consumption, max.: 50 mA<br>Interface: RS 485<br>Connections: 3 Piece(s)<br>Degree of protection: IP 67 |
|  | 50101699 | MA 8.1      | Modular connection unit | Supply voltage: 10 ... 30 V<br>Current consumption, max.: 50 mA<br>Interface: RS 232<br>Connections: 3 Piece(s)<br>Degree of protection: IP 67 |

## Accessories

### Connection technology - Connection cables

|                                                                                   | Part no. | Designation     | Article          | Description                                                                                                                                                                        |
|-----------------------------------------------------------------------------------|----------|-----------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50040757 | KB 008-3000 A   | Connection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 3.000 mm<br>Sheathing material: PUR |
|                                                                                   | 50101941 | KB-008-3000 A-S | Connection cable | Connection 1: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Connector, LED: No<br>Connection 2: Open end<br>Shielded: Yes<br>Cable length: 3.000 mm<br>Sheathing material: PUR   |

### Connection technology - Interconnection cables

|                                                                                    | Part no. | Designation                | Article               | Description                                                                                                                                                                                      |
|------------------------------------------------------------------------------------|----------|----------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50133891 | KDS S-M12-5A-M12-5A-P1-030 | Interconnection cable | Connection 1: Connector, M12, Axial, Female, A-coded, 5 -pin<br>Connection 2: Connector, M12, Axial, Male, A-coded, 5 -pin<br>Shielded: Yes<br>Cable length: 3,000 mm<br>Sheathing material: PUR |

### Mounting technology - Rod mounts

|                                                                                     | Part no. | Designation  | Article         | Description                                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------|----------|--------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50127177 | BTU 008M-D10 | Mounting system | Design of mounting device: Mounting system<br>Fastening, at system: Sheet-metal mounting, For 10 mm rod<br>Mounting bracket, at device: Screw type<br>Type of mounting device: Turning, 360°, Adjustable, Clampable<br>Material: Metal |

### Mounting technology - Other

|                                                                                     | Part no. | Designation | Article         | Description                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|----------|-------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | 50036196 | BT 8-0      | Mounting device | Design of mounting device: Mounting clamp<br>Fastening, at system: Mounting thread<br>Mounting bracket, at device: Clampable<br>Type of mounting device: Rigid<br>Material: Metal<br>Shock absorber: No |
|  | 50104791 | BT 8-01     | Mounting device | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal                                                                                               |

Accessories

| Note                                                                             |                                                                                                                                  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
|  | <p>A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.</p> |