# Technical data sheet
# Stationary bar code reader
Part no.: 50105420
BCL 8 SN 552

Figure can vary

**Contents**

# 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** | 500 scans/s |
| **Bar codes per reading gate, max. number** | 63 Piece(s) |

## Optical data

| | |
|---|---|
| **Reading distance** | 50 ... 110 mm |
| **Light source** | Laser, Red |
| **Laser light wavelength** | 655 nm |
| **Laser class** | 2, IEC / EN 60825-1:2014 |
| **Transmitted-signal shape** | Continuous |
| **Usable opening angle (reading field opening)** | 60 ° |
| **Modulus size** | 0.12 ... 0.4 mm |
| **Reading method** | Line scanner |
| **Scanning rate** | 500 scans/s |
| **Beam deflection** | Via rotating polygon wheel |
| **Light beam exit** | Front |

## Electrical data

| | |
|---|---|
| **Protective circuit** | Short circuit protected |

### Performance data

| | |
|---|---|
| **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** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Number of conductors** | 5 -wire |
| **Wire cross section** | 0.25 mm² |

## 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** | 135 g |
| **Housing color** | Red |
| **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

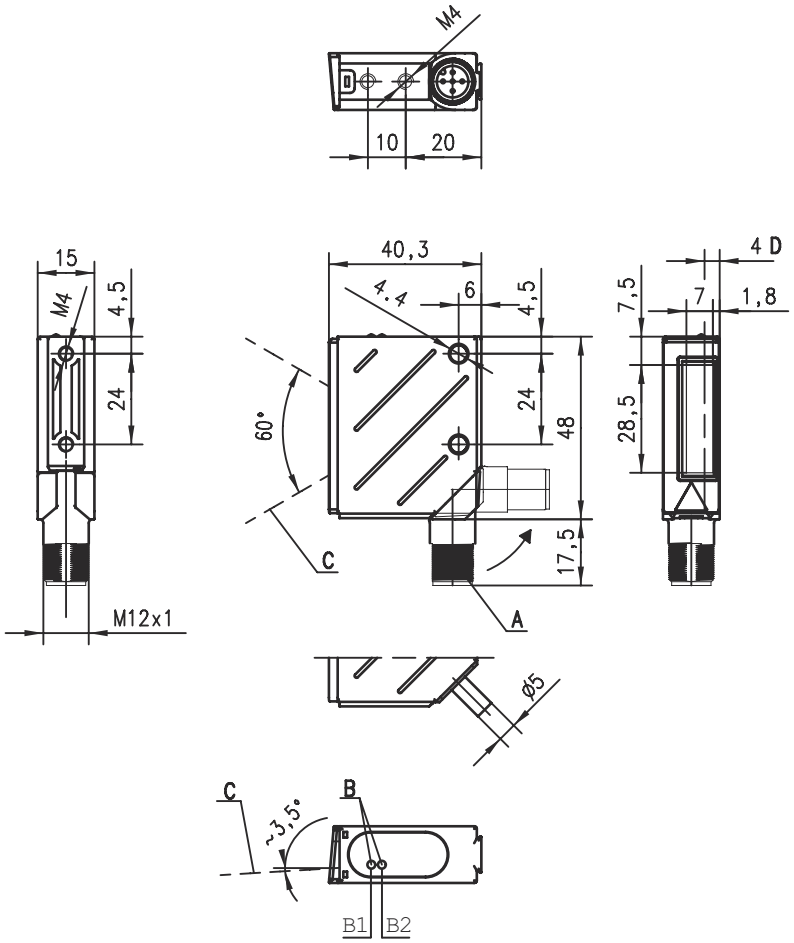
| | |
|---|---|
| **Degree of protection** | IP 67 |
| **Protection class** | III |
| **Certifications** | c UL US |
| **Test procedure for EMC in accordance with standard** | EN 61000-6-2, -3 |
| **Test procedure for shock in accordance with standard** | IEC 60068-2-27, test Ea |
| **Test procedure for vibration in accordance with standard** | IEC 60068-2-6, test Fc |
| **US patents** | US 6,735,007 B |
| | US 6,822,774 B |

## Classification

| | |
|---|---|
| **Customs tariff number** | 84719000 |
| **eCl@ss 5.1.4** | 27280102 |
| **eCl@ss 8.0** | 27280102 |
| **eCl@ss 9.0** | 27280102 |
| **eCl@ss 10.0** | 27280102 |
| **eCl@ss 11.0** | 27280102 |
| **ETIM 5.0** | EC002550 |
| **ETIM 6.0** | EC002550 |
| **ETIM 7.0** | 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

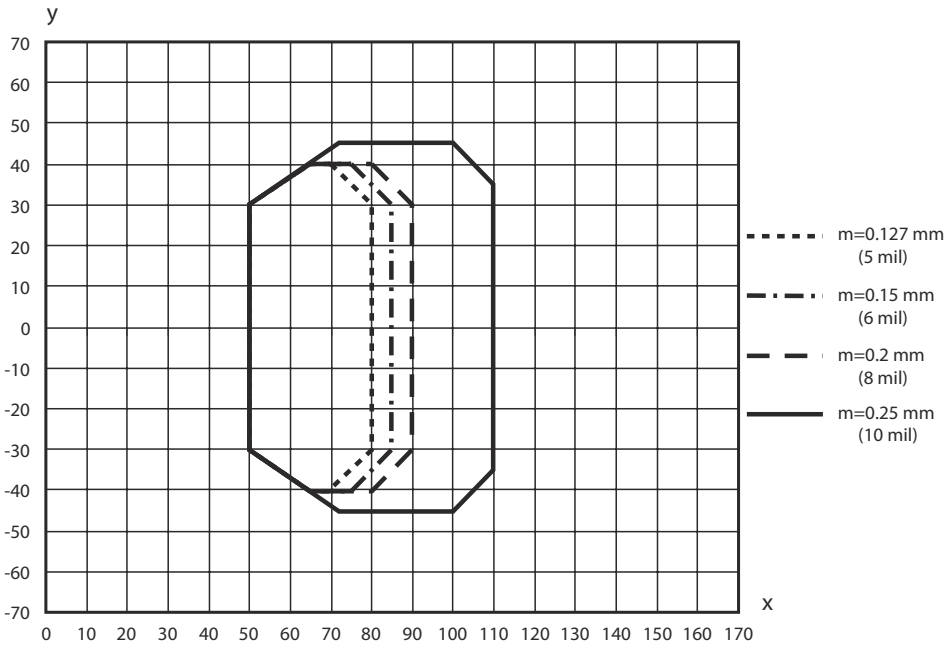
## Connection 1

| | |
|---|---|
| **Function** | Data interface |
| | PWR / SW IN / OUT |
| **Type of connection** | Cable |
| **Cable length** | 2,000 mm |
| **Sheathing material** | PVC |
| **Cable color** | Black |
| **Number of conductors** | 5 -wire |
| **Wire cross section** | 0.25 mm² |

| Conductor color | Conductor assignment |
|---|---|
| **Brown** | +5 V DC |
| **White** | RS 232 RxD |
| **Blue** | GND |
| **Black** | RS 232 TxD |
| **Gray** | SWIN/SWOUT |

# Diagrams

## Reading field curve




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

# 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 |
| | Orange, flashing | Service operation |
| 2 | Green, continuous light | Reading successful |
| | Red, continuous light | No reading result |
| | Orange, continuous light | Reading gate active |

# 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.

# Notes

**For UL applications:**

- For UL applications, use is only permitted in Class 2 circuits in accordance with the NEC (National Electric Code).

**WARNING! LASER RADIATION – CLASS 2 LASER PRODUCT**

**Do not stare into beam!**
**The device satisfies the requirements of IEC/EN 60825-1:2014 safety regulations for a product of laser class 2 as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 56" from May 08, 2019.**

- Never look directly into the laser beam or in the direction of reflected laser beams! If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- Do not point the laser beam of the device at persons!
- Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- 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.
- If the scanner motor fails during the emission of laser radiation, the limit value of laser class 2 in accordance with IEC 60825-1:2014 could be exceeded. The device has safeguards to prevent this occurrence.
- If the emitted laser beam is at a standstill, immediately disconnect the faulty bar code reader from the voltage supply.
- The BCL8 emits scanned optical radiation at a wavelength of 655 nm (red).
- Looking at the device's mirror and operating at the lowest scanning rate (500 scans/s) at a viewing distance of 100 mm results in pulses with a pulse duration shorter than 420 µs on the retina of the eye. The total pulse peak power at the exit window is less than 1.7 mW.
- The average laser power is less than 1 mW in accordance with laser class 2 acc. to IEC 60825-1:2014

**NOTE**

**Affix laser information and warning signs!**
**Laser information and warning signs are affixed to the device. In addition, self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages.**

- Affix the laser information sheet to the device in the language appropriate for the place of use. When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" note.
- Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
- Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

# Accessories

## 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 |

# Accessories

## 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 |
|  | 50104791 | BT 8-01 | Mounting device | Fastening, at system: Through-hole mounting<br>Mounting bracket, at device: Screw type<br>Material: Metal |

**Note**

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