

## **Technical data sheet Stationary bar code reader** Part no.: 50116198 BCL 300i R1 M 102



 Leuze electronic GmbH + Co. KG
 info@leuze.com • www.leuze.com
 changes

 The Sensor People
 In der Braike 1, D-73277 Owen/Germany
 Phone: +49 7021 573-0 • Fax: +49 7021 573-199
 eng • 2025-04-03

We reserve the right to make technical changes

## **Technical data**

#### Basic data

Series	BCL 300i
Functions	
Functions	Alignment mode
	AutoConfig
	AutoControl
	AutoReflAct
	Code fragment technology
	LED indicator
	Reference code comparison
Characteristic parameters	
MTTF	110 years
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	60 320 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
Beam deflection	Via rotating polygon wheel
Light beam exit	Front
Raster (number of lines)	8 Piece(s)
Scanning field at scanner distance of 100 mm	14 mm
Scanning field at scanner distance of 200 mm	24 mm
Scanning field at scanner distance of 300 mm	35 mm
Scanning field at scanner distance of 400 mm	45 mm

#### **Electrical data**

Protective circuit

Polarity reversal protection

Performance data Supply voltage U<sub>B</sub> Power consumption, max.

18 ... 30 V, DC 4.5 W

## Leuze

Inputs/outputs selectable	
Output current, max.	60 mA
Number of inputs/outputs select	ctable 2 Piece(s)
Input current, max.	8 mA
Interface	
Туре	RS 232, RS 422
RS 232	
Function	Process
Transmission speed	4,800 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	7,8
Stop bit	1.2
Parity	Adjustable
Transmission protocol	<stx><data><cr><lf></lf></cr></data></stx>
Data encoding	ASCII
RS 422	
Function	Process
Transmission speed	4,800 115,200 Bd
Data format	Adjustable
Start bit	1
Data bit	7, 8 data bits
Stop bit	1, 2 stop bits
Transmission protocol	Adjustable
Data encoding	ASCII
Service interface	
Туре	USB 2.0
USB	
Function	Configuration via software
Connection	
Number of connections	1 Piece(s)
Connection 1	
Function	BUS OUT
- unotion	Connection to device
	Data interface
	PWR / SW IN / OUT
	Service interface
	Service Interface

Service interface Type of connection Plug connector, It is essential to use a connection unit when commissioning the device. 32 -pin No. of pins Туре Male

### **Technical data**

## Leuze

#### Mechanical data

Design	Cubic
Dimension (W x H x L)	95 mm x 44 mm x 68 mm
Housing material	Metal
Metal housing	Diecast aluminum
Lens cover material	Glass
Net weight	270 g
Housing color	Red
	Silver
Type of fastening	Dovetail grooves
	Fastening on back
	Via optional mounting device

#### **Operation and display**

Type of display	LED
Number of LEDs	2 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 55022
	EN 61000-4-2, -3, -4, -6
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

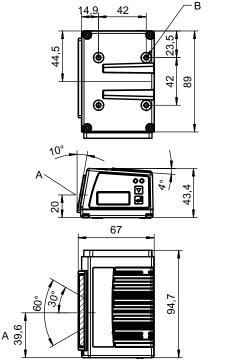
#### Classification

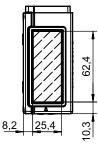
Customs tariff number	84719000
ECLASS 5.1.4	27280102
ECLASS 8.0	27280102
ECLASS 9.0	27280102
ECLASS 10.0	27280102
ECLASS 11.0	27280102
ECLASS 12.0	27280102
ECLASS 13.0	27280102
ECLASS 14.0	27280102
ECLASS 15.0	27280102
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
ETIM 9.0	EC002550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

### **Dimensioned drawings**

All dimensions in millimeters







## **Electrical connection**

**Connection 1** 

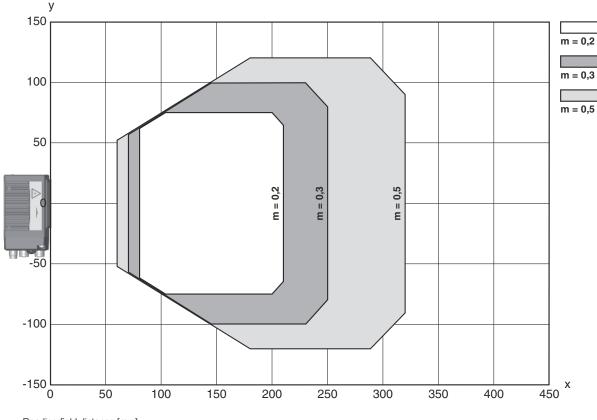
Function	BUS OUT
	Connection to device
	Data interface
	PWR / SW IN / OUT
	Service interface
Type of connection	Plug connector
Type of connection	It is essential to use a connection unit when commissioning the device.
No. of pins	32 -pin
Туре	Male

- A Optical axis
  - B M4 thread (5 mm deep)

#### Diagrams

# Leuze

#### Reading field curve



x Reading field distance [mm]

y Reading field width [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 BUS	Green, flashing	Initialization
	Green, continuous light	Bus operation ok
	Red, flashing	Communication error
	Red, continuous light	Bus error

#### Part number code

Part designation: BCL XXXX YYZ AAA BB CCCC



BCL	Operating principle BCL: bar code reader
XXXX	Series/interface (integrated fieldbus technology) 300i: RS 232 / RS 422 (stand-alone) 301i: RS 485 (multiNet slave) 304i: PROFIBUS DP 308i: EtherNet TCP/IP, UDP 338i: EtherCAT 348i: PROFINET RT 358i: EtherNet/IP
YY	Scanning principle S: line scanner (single line) R1: line scanner (raster) O: oscillating-mirror scanner (oscillating mirror)
Z	Optics N: High Density (close) M: Medium Density (medium distance) F: Low Density (remote) L: Long Range (very large distances) J: ink-jet (depending on the application)
ΑΑΑ	Beam exit 100: lateral 102: front
ВВ	Special equipment         D: With display         H: with heating         DH: optionally with display and heating         P: plastic exit window
CCCC	Functions F007: optimized process data structure F099: OPC-UA function

1	
	2
100	

Note

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

#### Notes

	Z
	Ŕ
	Ŕ
$\frown$	Ŕ

Observe intended use!

- b This product is not a safety sensor and is not intended as personnel protection.
- $\ensuremath{\triangleright}$  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 <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.

#### Accessories

## Leuze

## Connection technology - Connection unit

 Part no.	Designation	Article	Description
50114369	MA 100	Modular connection unit	Supply voltage: 18 30 V Interface: RS 232, RS 485 Connections: 1 Piece(s) Degree of protection: IP 54

#### 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

#### Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
5	50114571 *	KB 301-3000	Interconnection cable	Suitable for interface: RS 232, RS 422, RS 485 Connection 1: Socket connector Connection 2: JST ZHR connector, 10 -pin, 6 -pin Shielded: Yes Cable length: 3,000 mm Sheathing material: PVC
	50117011	KB USB A - USB miniB	Service line	Suitable for interface: USB Connection 1: USB Connection 2: USB Shielded: Yes Cable length: 1,500 mm Sheathing material: PVC

\* Necessary accessories, please order separately

### Connection technology - Connection boxes

 Part no.	Designation	Article	Description
50116463 *	MK 300	Connection unit	Suitable for: BCL 300i, BPS 300i Interface: RS 232 Number of connections: 3 Piece(s) Connection: Terminal
50116468 *	MS 300	Connection unit	Suitable for: BCL 300i, BPS 300i Interface: RS 232 Number of connections: 3 Piece(s) Connection: Connector, M12

#### Accessories

## Leuze

	Part no.	Designation	Article	Description
200	50150597 *	MS 342	Connector hood	Suitable for: BCL 348i Supply voltage: DC Interface: IO-Link Number of connections: 1 Piece(s) Connection: Connector, M12

\* Necessary accessories, please order separately

### Mounting technology - Mounting brackets

I	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
<b>S</b>	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

#### Mounting technology - Other

 Part no.	Designation	Article	Description
50124941	BTU 0300M-W	Mounting device	Fastening, at system: Through-hole mounting Mounting bracket, at device: Clampable, Groove mounting, Suited for M4 screws Material: Metal Shock absorber: No

#### 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

#### Accessories

## Leuze

#### 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.
<b>√</b> ####†	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
(	6	✤ A list with all available accessories can be found on the Leuze website in the Download tab of the article detailed page.