

Technical data sheet Stationary bar code reader Part no.: 50116337 BCL 304i R1 M 100



The Sensor People In der Braike 1, 73277 Owen

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Technical data

Basic data

Series	BCL 300i
Functions	
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

Optical data

Reading distance	30 290 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
Raster (number of lines)	8 Piece(s)
Scanning field at scanner distance of 100 mm	17 mm
Scanning field at scanner distance of 200 mm	27 mm
Scanning field at scanner distance of 300 mm	38 mm
Scanning field at scanner distance of 400 mm	48 mm

Electrical data

Protective circuit

Performance data Supply voltage U_B Power consumption, max.

18 ... 30 V, DC 4.5 W

Polarity reversal protection

Inputs/outputs se	lectable	
Output current, max		60 mA
Number of inputs/ou	tputs selectable	2 Piece(s)
Input current, max.		8 mA
Interface		
Туре		PROFIBUS DP
PROFIBUS DP		
Function		Process
Classification		V1
Transmission speed		0.0096 12 Mbit/s
Service interface		
Туре		USB 2.0
USB		
Function		Service
Connection		
Number of connection	5	1 Piece(s)
Connection 1		
Function		BUS IN
		BUS OUT
		Connection to device
		Data interface
		PWR / SW IN / OUT
		Service interface
Type of connection		Plug connector, It is essential to use a
		connection unit when commissioning the device.
No. of pins		32 -pin
Туре		Male
Mechanical data		
Design		Cubic
Dimension (W x H x L)		103 mm x 44 mm x 96 mm
Housing material		Metal
Metal housing		Diecast aluminum
Lens cover material		Glass
Net weight		350 g
Housing color		Red
		Silver
Type of fastening		Dovetail grooves
		Fastening on back
		Via optional mounting device
Operation and displ	ау	
Type of display		LED
Number of LEDs		2 Piece(s)
Type of configuration		Via web browser
Environmental data		
Ambient temporature	operation	0 40 °C
Ambient temperature, Ambient temperature,	-	-20 70 °C
Relative humidity (non	-	-20 70 °C
iterative number (101	condensity)	00070

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Certifications

Degree of protection	IP 65
Protection class	III
Certifications	c UL US
Test procedure for EMC in accordance	EN 55022
with standard	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

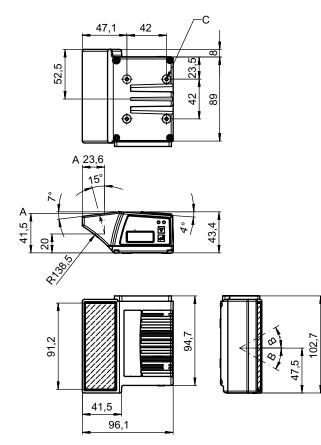
Classification

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
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550

Dimensioned drawings

All dimensions in millimeters





- A Optical axis
- B Deflection angle of the laser beam: \pm 30 $^{\circ}$
- C M4 thread (5 mm deep)

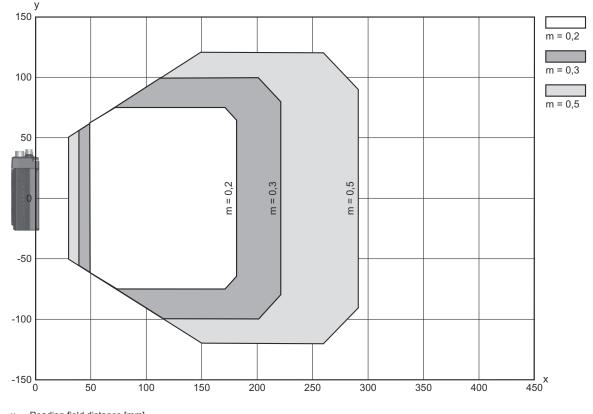
Electrical connection

Connection 1

Function	BUS IN
	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

Diagrams

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

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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)		
AAA	Beam exit 100: lateral 102: front		
BB	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		

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Note

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

Notes

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Observe intended use!

- $\$ This product is not a safety sensor and is not intended as personnel protection.
- b Only use the product in accordance with its intended use.

ATTENTION! LASER RADIATION - CLASS 1 LASER PRODUCT Image: 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. Image: 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.

Accessories

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Connection technology - Connection cables

	Part no.	Designation	Article	Description
Y	50135243	KD PB-M12-4A-P3- 050	Connection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Female, B-coded, 5 -pin Connector, LED: No Connection 2: Open end Shielded: Yes Cable length: 5.000 mm Sheathing material: PUR
	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
Y	50135248	KS PB-M12-4A-P3- 050	Connection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Male, B-coded, 5 -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
	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
	50135254	KDS PB-M12-4A- M12-4A-P3-050	Interconnection cable	Suitable for interface: PROFIBUS DP Connection 1: Connector, M12, Axial, Female, B-coded, 5 -pin Connection 2: Connector, M12, Axial, Male, B-coded, 4 -pin Shielded: Yes Cable length: 5,000 mm Sheathing material: PUR

Connection technology - Terminating resistors

 Part no.	Designation	Article	Description
50038539	TS 02-4-SA	Terminator plug	Suitable for: MultiNet Plus, PROFIBUS DP Function: Bus termination Connection 1: Connector, M12, Axial, Male, B-coded, 4 -pin

Accessories

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Connection technology - Connection boxes

	Part no.	Designation	Article	Description
	50116465 *	MK 304	Connection unit	Suitable for: BCL 304i, BPS 304i Interface: PROFIBUS DP Number of connections: 4 Piece(s) Connection: Terminal
1998	50116470 *	MS 304	Connection unit	Suitable for: BCL 304i, BPS 304i Interface: PROFIBUS DP Number of connections: 4 Piece(s) Connection: Connector, M12

* Necessary accessories, please order separately

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
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

Accessories

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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. Restrictions: Travel and accommodation charged separately and according to expenditure.
у. С	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. Restrictions: No mechanical (mounting) and electrical (wiring) work performed, no changes (attachments, wiring, programming) to third-party components in the nearby environment.
	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. Restrictions: Travel costs and accommodation expenses charged separately and according to expenditure.
	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.

