

# Technical data sheet Stationary bar code reader

Part no.: 50126969

BCL 608i SM 102



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- Dimensioned drawings
- Electrical connection
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- Part number code
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## **Technical data**



• •	DOL 000:
Series	BCL 600i
Functions	
Functions	Alignment mode
	AutoConfig
	AutoControl
	AutoReflAct
	Code fragment technology
	LED indicator
	Reference code comparison
Characteristic parameters	
MTTF	42.4 years
Read data	
Code types, readable	2/5 Interleaved
	Codabar
	Code 128
	Code 39
	Code 93
	EAN 128
	EAN 8/13
	EAN Addendum
	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	400 900 mm
Light source	Laser, Blue
Wavelength	405 nm
Laser class	2, IEC/EN 60825-1:2014
Transmitted-signal shape	Continuous
Usable opening angle (reading field opening)	60 °
Bar code contrast (PCS)	60 %
Modulus size	0.25 0.35 mm
Reading method	Line scanner
Beam deflection	Via rotating polygon wheel
Light beam exit	Front
Electrical data	
Protective circuit	Polarity reversal protection
Performance data	
Supply voltage U <sub>B</sub>	10 30 V, DC
Power consumption, max.	14 W

Output current, max.         60 mA           Number of inputs/outputs selectable 4 Piece(s)           Voltage type, outputs         Typ. U <sub>g</sub> / 0 V           Voltage type, inputs         DC           Switching voltage, inputs         Typ. U <sub>g</sub> / 0 V           Input current, max.         8 mA           Interface         Bethernet           Ethernet         Server           Address assignment         DHCP           Manual address assignment         Ton Mbit/s           Transmission speed         10 Mbit/s           Function         Process           Switch functionality         Integrated           Transmission protocol         TCP/IP           Service interface           Type         USB           USB           USB         USB           USB         USB           USB connection         Service interface           Type of connections         5 Piece(s)           Connection 1         USB           Function         Service interface           Type of connection         USB 2.0 Standard-A           Connector type         USB 2.0 Standard-A           Connection 2         Service           Function	inputs/outputs selectable	
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Switching voltage, outputs Voltage type, inputs Switching voltage, inputs Input current, max.  Switching voltage, inputs Input current, max.  Server  Type  Ethernet  Architecture  Client Server  Address assignment  Transmission speed  10 Mbit/s 100 Mbit/s Function Process Switch functionality Integrated Transmission protocol  TCP/IP  Service interface  Type  USB  USB  Function  Configuration via software Service  Connection  Number of connections  Service interface  Type of connection  USB  Designation on device SERVICE Connector  Connector  Type of connection  Signal IN Signal OUT Type of connection  Service Service  M12 Type Female Material Metal No. of pins Encoding PWR / SW IN / OUT Type of connection  PWR / SW IN / OUT Type of connection  Designation on device PWR Thread size M12 Type Male Material Metal	Number of inputs/outputs selectable	4 Piece(s)
Voltage type, inputs Switching voltage, inputs Input current, max.  8 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 Integrated Transmission protocol TCP/IP  Service interface  Type USB  Function Configuration via software Service  Connection  Number of connections Type of connection Service interface  USB Connection Type of connection USB Connection Service interface USB 25 Piece(s)  Connection 1 Function Service interface USB 25 Piece(s)  Connection 1 Function Service interface USB 25 Piece(s)  Connection 1 Function Service interface USB 20 Standard-A  Connection 2 Function Signal IN Signal OUT Type of connection Designation on device SW IN/OUT Thread size M12 Type Female Material Metal No. of pins Fenceding A-coded  Connector Type of connection PWR / SW IN / OUT Type of connection PWR / SW IN / OUT Type of connection Designation on device PWR Thread size M12 Type Male Material Metal Metal Metal	Voltage type, outputs	DC
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Designation on device PWR Thread size M12 Type Male Material Metal	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded
Thread size M12 Type Male Material Metal	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded
Type Male Material Metal	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded
Material Metal	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector
Material Metal	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR
	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device Thread size	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR M12
υ-μιι	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device Thread size Type	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR M12 Male
Encoding	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device Thread size Type Material No. of pins Encoding	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR M12 Male Metal
Encouring A-coded	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device Thread size Type Material No. of pins Encoding	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR M12 Male Metal 5 -pin
	Connection 1 Function Type of connection Designation on device Connector type  Connection 2 Function  Type of connection Designation on device Thread size Type Material No. of pins Encoding  Connection 3 Function Type of connection Designation on device Thread size Type Material No. of pins Encoding	Service interface USB SERVICE USB 2.0 Standard-A  Signal IN Signal OUT Connector SW IN/OUT M12 Female Metal 5 -pin A-coded  PWR / SW IN / OUT Connector PWR M12 Male Metal

Inputs/outputs selectable

## **Technical data**

Housing color

Type of fastening



Connection 4	
Function	BUS IN
Type of connection	Connector
Designation on device	HOST / BUS IN
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded
Connection 5	
Function	BUS OUT
	Connector
Type of connection	
Designation on device	BUS OUT
Thread size	M12
Туре	Female
No. of pins	4 -pin
Mechanical data	
Design	Cubic
Dimension (W x H x L)	123.5 mm x 63 mm x 104.2 mm
Housing material	Metal
Metal housing	Diecast aluminum
Lens cover material	Glass
Net weight	1,400 g

	Via optional mounting device
Operation and display	
Type of display	LED
	Monochromatic graphical display, 128x64 pixel, with background lighting
Number of LEDs	2 Piece(s)
Type of configuration	Via web browser
Operational controls	Button(s)
	Via service interface

Red

Silver

Dovetail grooves Mounting thread

#### **Environmental data**

Ambient temperature, operation	0 40 °C
Ambient temperature, storage	-20 70 °C
Relative humidity (non-condensing)	90 %
Extraneous light tolerance on the bar code, max.	2,000 lx

#### 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
	EN 61000-6-2
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

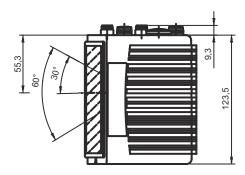
info@leuze.com • www.leuze.com

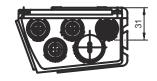
Customs tariff number	84719000
ECLASS 5.1.4	27280102
ECLASS 8.0	27280102
ECLASS 9.0	27280102
ECLASS 10.0	27280102
ECLASS 11.0	27280102
ECLASS 12.0	27280102
ECLASS 13.0	27280102
ECLASS 14.0	27280102
ETIM 5.0	EC002550
ETIM 6.0	EC002550
ETIM 7.0	EC002550
ETIM 8.0	EC002550
ETIM 9.0	EC002550

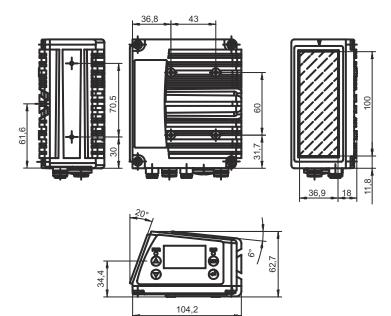
# **Dimensioned drawings**

All dimensions in millimeters









# **Electrical connection**

Connection 1	SERVIC

Function	Service interface
Type of connection	USB
Connector type	USB 2.0 Standard-A

Pin	Pin assignment
1	+5 V DC
2	DATA-
3	DATA+
4	GND

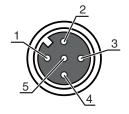
## **Electrical connection**

Encoding



Connection 2	SW IN/OUT
Function	Signal IN
	Signal OUT
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	5 -pin
Encoding	A-coded

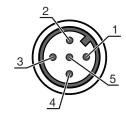
Pin	Pin assignment
1	VOUT
2	SWIO 1
3	GND
4	SWIO 2
5	FE



Connection 3	PWR
Function	PWR / SW IN / OUT
Type of connection	Connector
Thread size	M12
Туре	Male
Material	Metal
No. of pins	5 -pin

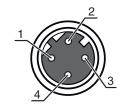
A-coded

Pin	Pin assignment
1	VIN
2	SWIO 3
3	GND
4	SWIO 4
5	FE



Connection 4	HOST / BUS IN
Function	BUS IN
Type of connection	Connector
Thread size	M12
Туре	Female
Material	Metal
No. of pins	4 -pin
Encoding	D-coded

Pin	Pin assignment
1	TD+
2	RD+
3	TD-
4	RD-

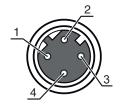


### **Electrical connection**



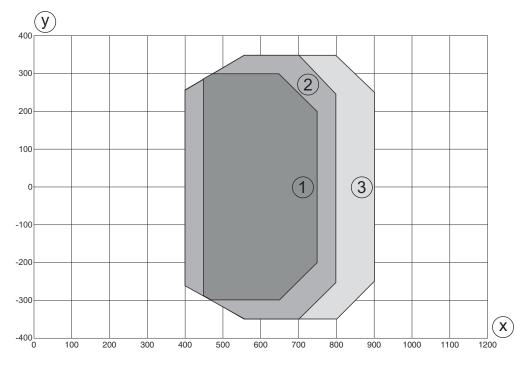
Connection 5	BUS OUT	
Function	BUS OUT	
Type of connection	Connector	
Thread size	M12	
Туре	Female	
Material	Metal	
No. of pins	4 -pin	
Encoding	D-coded	

Pin	Pin assignment
1	TD+
2	RD+
3	TD-
4	RD-



# **Diagrams**

Reading field curve - Medium Density

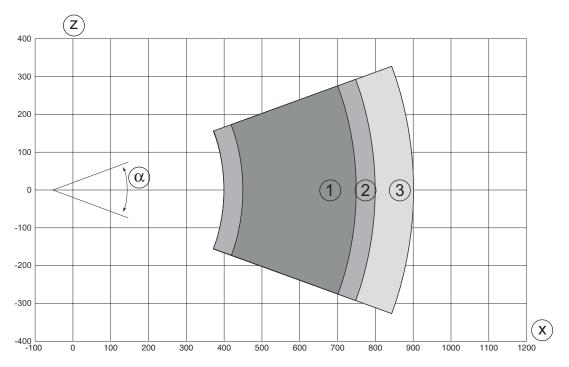


- Reading field width [mm]
- Reading field distance [mm]
- Module = 0.25 mm: 450 mm 750 mm (300 mm depth of field)
- Module = 0.3 mm: 400 mm 800 mm (400 mm depth of field) 2
- Module = 0.35 mm: 400 mm 900 mm (500 mm depth of field)

## **Diagrams**

# Leuze

## Reading field curve - Medium Density



- Reading field height [mm]
- Reading field distance [mm]
- Module = 0.25 mm: 450 mm 750 mm (300 mm depth of field)
- Module = 0.3 mm: 400 mm 800 mm (400 mm depth of field)
- Module = 0.35 mm: 400 mm 900 mm (500 mm depth of field)

# **Operation and display**

LED	Display	Meaning
1 PWR	Off	No supply voltage
	Green, flashing	Initialization
	Green, continuous light	Device OK
	Orange, flashing	Service operation
	Orange, continuous light	Reset
	Red, flashing	Device OK, warning set
	Red, continuous light	Device error
2 NET	Off	No supply voltage
	Green, flashing	BUS initialization
	Green, continuous light	Bus operation ok
	Orange, flashing	Service mode
	Orange, continuous light	Reset
	Red, flashing	Communication error
	Red, continuous light	Network error

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### Part number code



Part designation: BCL XXXX YYZ AAA B

BCL	Operating principle BCL: bar code reader
XXXX	Series/interface (integrated fieldbus technology) 600i: RS 232/RS 422/ RS 485 (multiNet master) 601i: RS 485 (multiNet slave) 604i: PROFIBUS DP 608i: Ethernet 648i: PROFINET 658i: EtherNet/IP
YY	Scanning principle S: line scanner (single line) 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)
AAA	Beam exit 100: lateral 102: front
ВВ	Special equipment H: With heating

#### 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.
- by Only use the product in accordance with its intended use.

#### ATTENTION! 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.
- b 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.

We reserve the right to make technical changes

#### **Notes**



#### **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

### **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

# Connection technology - Interconnection cables

	Part no.	Designation	Article	Description
 · · ·	50107726	KB USB A - USB A	Interconnection cable	Suitable for interface: USB Connection 1: USB Connection 2: USB Shielded: Yes Cable length: 1,800 mm Sheathing material: PVC
	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

### **Accessories**



# Mounting technology - Other

Part no.	Designation	Article	Description
50111224	BT 59	Mounting bracket	Fastening, at system: Groove mounting Mounting bracket, at device: Clampable Material: Metal Shock absorber: No

# Services

	Part no.	Designation	Article	Description
<b>₽</b>	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.
<del>      </del>	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.