

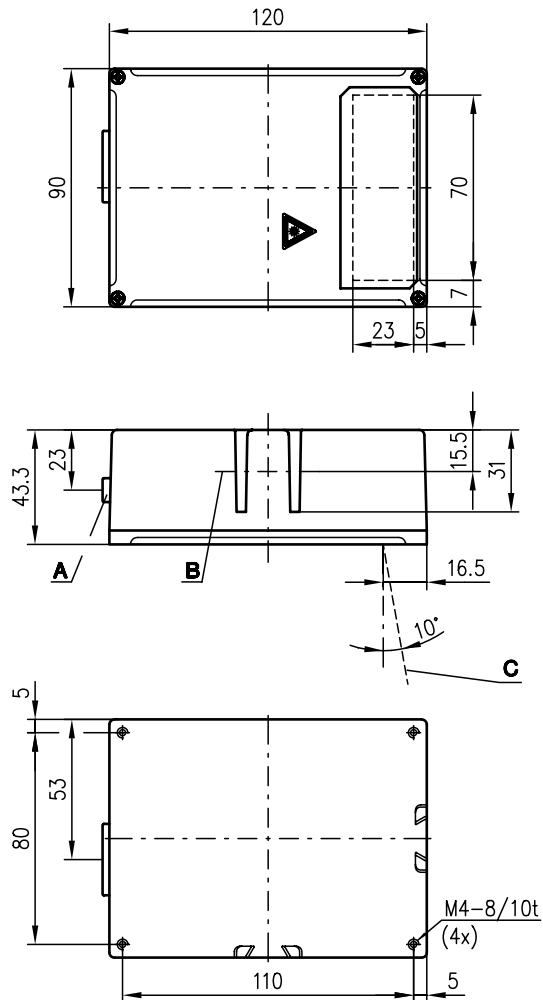


BCL 31/32

Bar code reader

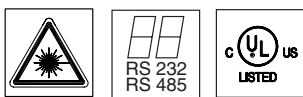


Dimensioned drawing



- A** 15-pin plug
- B** Position - centre of the BT 56
- C** Scanning beam - line scanner
Scanning beam - at various distances, the raster scanner has a raster line field of:

Scanner distance [mm]	50	100	200	300	400	450	700
Raster line field [mm]	15	21	32	44	55	61	84



- Scanning rate 1000 scans/s
- "autoRefIAct" automatic reflector activation
- Automatic detection of code type and code quality, reference code
- Parameters are stored fail-safe in an EEPROM
- Simple mounting and fastening
- RS 232 service interface with fixed data format
- Switching inputs and switching outputs
- J Optics for Ink-Jet applications



Accessories:

(available separately)

- MA 2/MA 2 L connector unit for BCL 31/32 stand alone or as a network slave
- MA 4 / MA 4 D connector unit for BCL 31/32 with parameter memory and optional display
- MA 4 1xx/MA 4 D 1xx/MA 4 1xx L connector unit for BCL 32 with parameter memory, interface module and optional display
- MA 22 DC Daisy Chain connector unit for 4 x BCL 32
- BT 56 dovetail rod mounting set
- KB 031-3000 connection cable for BCL with MA, 3 m long
- KB 040-3000 connection cable for BCL with MA, 3 m long

We reserve the right to make changes • Bcl31_32_e.fm



Specifications

Optical Data

Light source laser diode 650 ... 690nm
 Laser safety class 2
 Laser warning notice see remark
 Scanning rate BCL with M optics: 1000 scans/s
 BCL with F optics: 800 scans/s
 BCL with L optics: 800 scans/s
 BCL with J optics: 1000 scans/s
 Resolution BCL 3x xM 100: m = 0.2mm ... 0.5mm
 BCL 3x xF 100: m = 0.3mm ... 0.8mm
 BCL 3x xL 100: m = 0.35mm ... 0.8mm
 BCL 3x xJ 100: application-dependent
 see reading curve

Software

Code types all common code types
 Software features selectable output format, autoConfig, autoControl, autoReflAct, reference code comparison, multiple read, real time decoding, adjustment mode, diagnosis, reading gate control, control of switching inputs and switching outputs, etc.

Electrical data

Interface type BCL 31: RS 485
 BCL 32: RS 232
 Service interface RS 232 with fixed data format, 8 data bits, no parity, 1 stop bit
 Baud rate 110 ... 115400Bd
 Data formats data bits: 7, 8, 9
 parity: None, Even, Odd
 stop bits: 1, 2
 Protocols with/without framing protocol
 ACK/NAK, 3964 (R) RK 512, RTS/CTS
 X ON / X OFF, multiNet plus
 Ports BCL 31: 1 switching output, 1 switching input
 BCL 32: 2 switching outputs, 2 switching inputs
 LED green device ready (Power On)
 Operating voltage 10 ... 30VDC

Mechanical data

Protection class IP 65
 Weight 400g
 Dimensions (WxHxD) 120 x 90 x 43 mm
 Housing diecast aluminium

Environmental data

Ambient temp. (operation/storage) 0°C ... +40°C/-20°C ... +60°C
 Air humidity max. 90% rel. humidity, non-condensing
 Vibration IEC 60068-2-6, FC test
 Shock IEC 60068-2-27, Ea test
 Electromagnetic compatibility EN 61326-1, IEC 61000-4-2, -3, -4 and -6

Tables

Diagrams

Pin assignment for 15-pin sub-D connector

Pin assignment BCL 31 with RS 485 interface			Pin assignment BCL 32 with RS 232 interface		
Pin No.	Description		Pin No.	Description	
3	RS485_A	RS 485 interface	3	CTS	Hardware handshake RS 232 host interface
4	RS485_B		4	RTS	
1	GND_485		11	RxD	Host/service interface, electrically insulated (service if pins 7 and 15 are bridged)
5	/MA0	12	TxD		
6	/MA1	1	GND		
13	/MA2	Address selection	5	Daisy Chain	Bridge to pin 15: Daisy chain is active
14	/MA3		13	-	Reserved
9	/MA4		14	-	
2	SWIN1	Switching input	2	SWIN1	Switching inputs
10	SWOUT1	Switching output	9	SWIN2	
7	/Serv	Bridge to pin 15: service operation RS 232 interface	10	SWOUT1	Switching outputs
11	RxD_Serv	Service interface electrically coupled	6	SWOUT2	
12	TxD_Serv		7	/Serv	Bridge to pin 15: service operation RS 232 interface
8	VIN	Voltage supply	8	VIN	Voltage supply
15	GND		15	GND	

Remarks

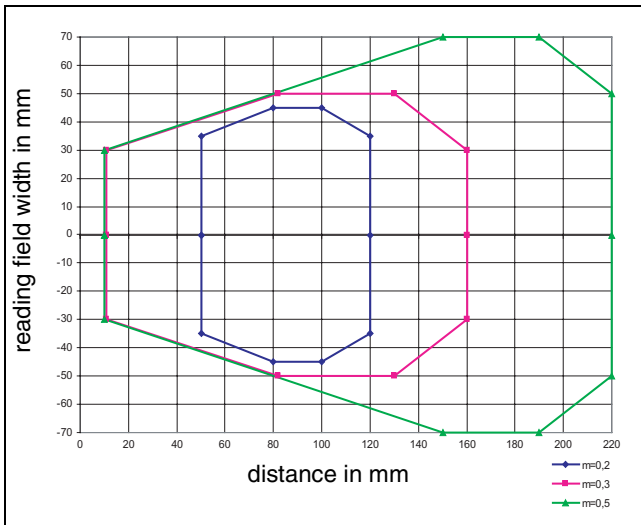




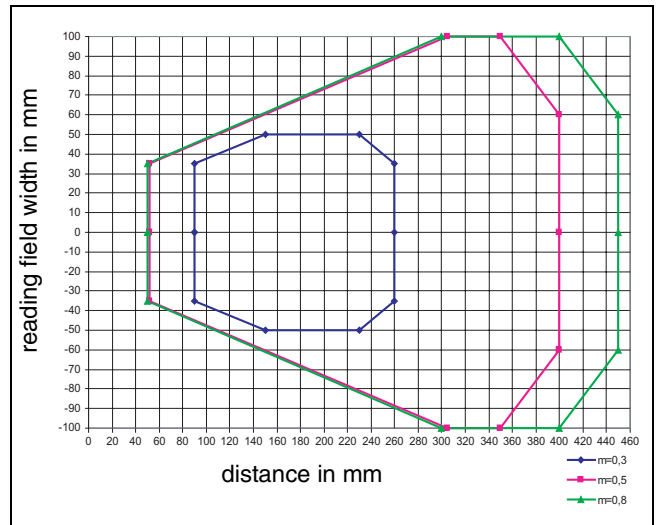
BCL 31/32

Reading curves

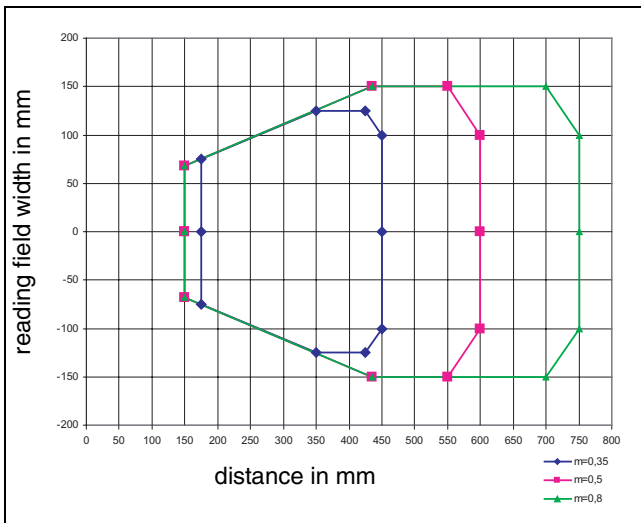
BCL 31/32 type M with 1000 scans/sec.



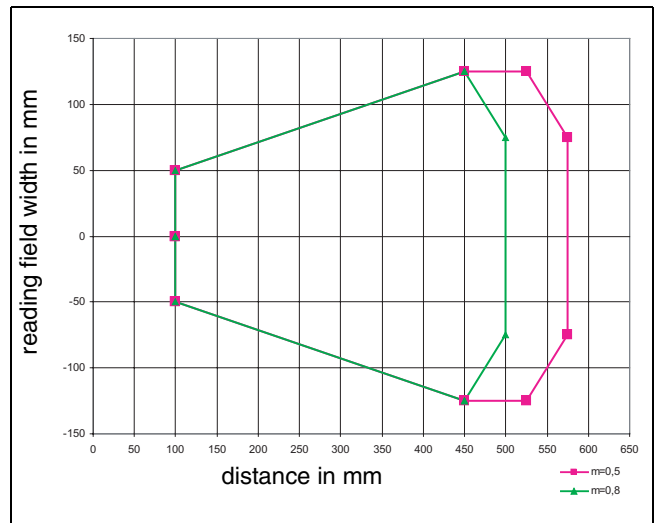
BCL 31/32 type F with 800 scans/sec.



BCL 31/32 type L with 800 scans/sec.



BCL 31/32 type J with 1000 scans/sec. 1)



1) The specified reading curve applies for the standard case: black on white, sharp contours, homogeneously printed code.

The actual reading field for an ink jet application must be checked with respect to the application.



Description

The BCL 31/32 bar code readers are high-performance scanners with a scanning rate of up to 1000 scans/s which can read all common bar codes with great reliability. They are capable of resolving module widths from $m = 0.2$ to 0.8 mm.

A special bar code reader with optics version J is available for all ink jet applications. This reader has been optimised for low contrast bar codes that generally feature gaps.

The scanners are provided with various methods of activation. These include, for example, the switching inputs for external sensors, the online command "+" for activation via the host interface, or the patented **autoRefIAct** function.

autoRefIAct stands for automatic Reflector Activation and permits an **activation without additional sensors**. This is achieved by directing the scanner with reduced scanning beam towards a reflector mounted behind the conveyor path. As long as the scanner is targeted at the reflector, the read gate remains closed. If, however, the reflector is blocked by an object such as a container with a bar code label, the scanner activates the read procedure, and the label on the container is read. When the path from the scanner to the reflector has cleared, the read procedure has completed and the scanning beam is reduced and again directed onto the reflector. The read gate is closed.

As a standalone device, the BCL 31/32 is used in conjunction with a connector unit MA 2, MA 2 L, MA 4, or MA 4 D.

In addition, the BCL 31/32 scanner versions offer various networking options.

As a slave for the Leuze network, multiNet Plus, the BCL 31 is used in combination with the connector units MA 2, MA 2 L, MA 4 and MA 4 D, the BCL 32 in combination with the connector units MA 4 1xx/MA 4 D 1xx/MA 4 1xx L. Hence, up to 30 scanners can be networked together with the network master unit MA 31.

The BCL 32 can be used to network 4 scanners via RS 232 using the Daisy Chain Protocol and the connector unit MA 22 DC.

Order guide

Type	Description	Part No.
BCL 32 S M 100	single line scanner with RS 232 interface and M optics	500 36272
BCL 32 S F 100	single line scanner with RS 232 interface and F optics	500 36274
BCL 32 S L 100	single line scanner with RS 232 interface and L optics	500 41384
BCL 32 R1 M 100	raster scanner with RS 232 interface and M optics	500 36271
BCL 32 R1 F 100	raster scanner with RS 232 interface and F optics	500 36273
BCL 32 R1 L 100	raster scanner with RS 232 interface and L optics	500 41383
BCL 32 R1 J 100	raster scanner with RS 232 interface and J optics for Ink-Jet applications	500 41800
BCL 31 S M 100	single line scanner with RS 485 interface and M optics	500 36276
BCL 31 S F 100	single line scanner with RS 485 interface and F optics	500 36278
BCL 31 S L 100	single line scanner with RS 485 interface and L optics	500 41379
BCL 31 R1 M 100	raster scanner with RS 485 interface and M optics	500 36275
BCL 31 R1 F 100	raster scanner with RS 485 interface and F optics	500 36277
BCL 31 R1 L 100	raster scanner with RS 485 interface and L optics	500 41380
BCL 31 R1 J 100	raster scanner with RS 485 interface and J optics for Ink-Jet applications	500 41798