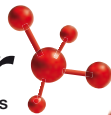Leuze **electronic**

the sensor people

BCL 300*i* bar code reader
The multi-talent with extensive equipment options

modular
individual sensor solutions

You decide what
your bar code reader can do.

The BCL 300*i* bar code series sets new standards when it comes to individual equipment options.

What makes our new BCL 300i series special is its **modularity**. For the first time, you can select from a large number of equipment options to individually configure a device optimally for your application. You thereby obtain a bar code reader perfectly tailored to your needs with regard to function, connection, mounting, and operation and one that stands for reliability and system availability.
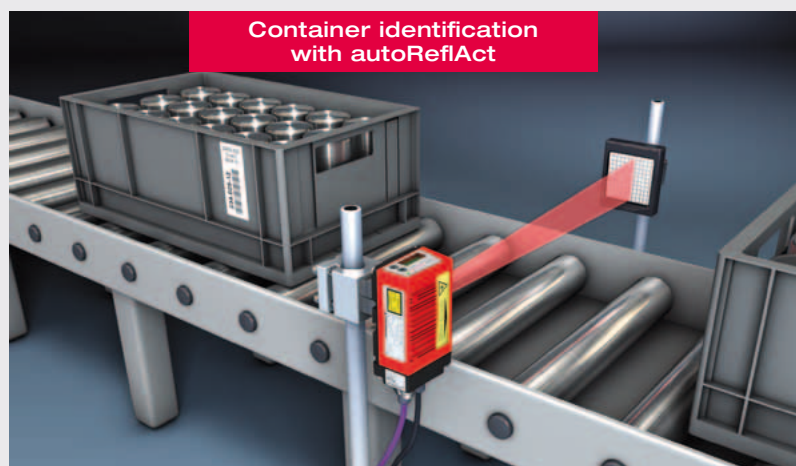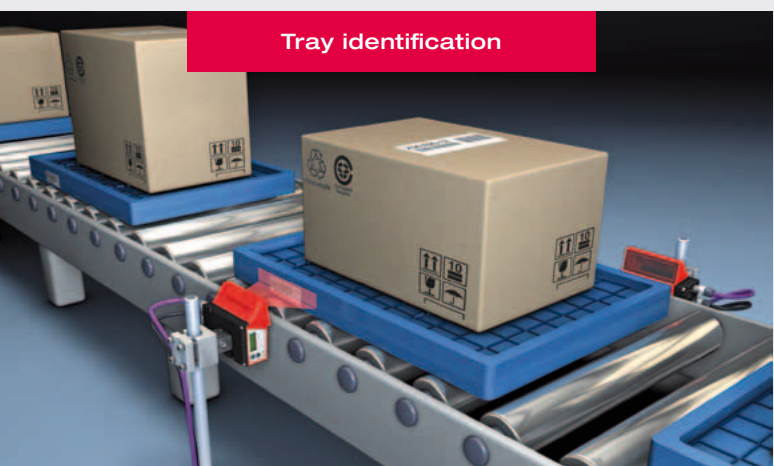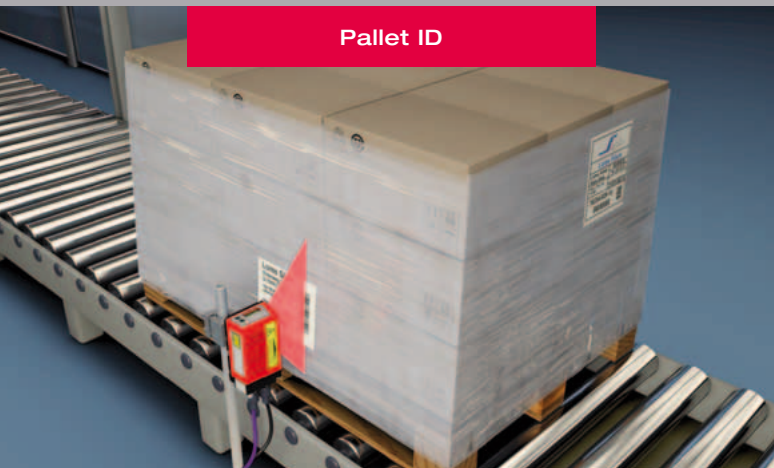
Top performance and practical innovation in all areas

The BCL 300i convinces not only with its proven performance characteristics such as the high-performance code reconstruction technology, the integrated fieldbus connectivity and the—in this performance class—unrivalled optical data at long range and wide opening angle.

With the unique connector hood, the device can also be quickly connected to your fieldbus environment without complicated plug mounting.

In addition, the compact scanner can be used as an Ethernet switch in the network and can be configured either via the browser-based webConfig tool conveniently and directly via Ethernet or directly in the PROFIBUS / PROFINET environment.

Diverse application possibilities.

Pallet ID

Container identification in constrained spaces

Container identification with variable heights

Container identification from the side

Tray identification

Container identification with autoReflAct

Impressive performance characteristics:
The benefits of the BCL 300*i* at a glance.

With the new BCL 300i, you can select between freely combinable equipment variants and a variety of impressive performance parameters integrated by default. We call this flexible type of product configuration modular.

Ethernet

Ethernet switch

The device can function as an Ethernet switch to create a line structure network.

High-quality optics

The optics used enable a large depth of field and opening angle for the reliable detection of even the widest transport systems.

Full CRT (Code Fragment Technology)

With the most powerful code fragment technology on the market, it also reliably detects heavily damaged or soiled codes.

Compact design

Compact housing design for problem-free placement directly at the conveyor line.

modular

individual sensor solutions

Integrated switch

- For Ethernet-based interfaces for setting up a line structure

Options

- Heating
- Mounting systems

Display elements

- Graphical display
- LED display

Optics / read fields

- High Density (N)
- Medium Density (M)
- Low Density (F)
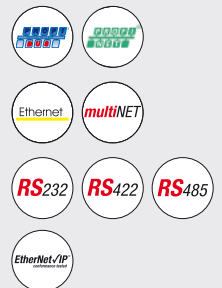- Ultra Low Density (L)

Connection technology

- Modular connector hood
- Modular terminal hood
- Modular connection box
- Connection cable

Scanner

- Oscillating mirror
- Deflecting mirror
- Front mirror
- Line scanner
- Raster scanner

Interfaces

- PROFIBUS
- PROFINET
- Ethernet TCP/IP
- multiNet
- RS 232 / 422 / 485
- EtherNet IP

Ethernet   *multiNET*

*RS*232   *RS*422   *RS*485

EtherNet/IP

Various **connector hoods** make possible flexible **connection options.**

The three available models of the BCL 300i – with front scanner, with deflection mirror or with oscillating mirror – can be combined with any of three different connector hoods. Thanks to this feature and the optional MA 100 connector unit, you can integrate the device flexibly into a variety of environments.

Code reader

| Front mirror | Deflecting mirror | Oscillating mirror |

Connector hood / connector unit

KB 301   KB 301   MS 3xx   MK 3xx

MA 100

Cable connection via MA 100   Cable connection   M12 connection   Connection with terminal hood

Configuration and parameterization
made easy.

## The quick way to individually configure your bar code reader.

The Leuze electronic BCL 300*i* webConfig tool.

With the integrated webConfig tool, an operating system independent, web-technology based, multilingual user interface is available for configuring and parameterizing. The individual parameters are graphically displayed in a easy-to-understand manner.
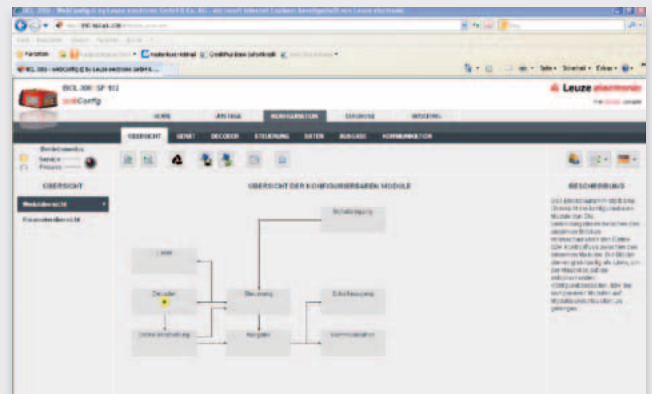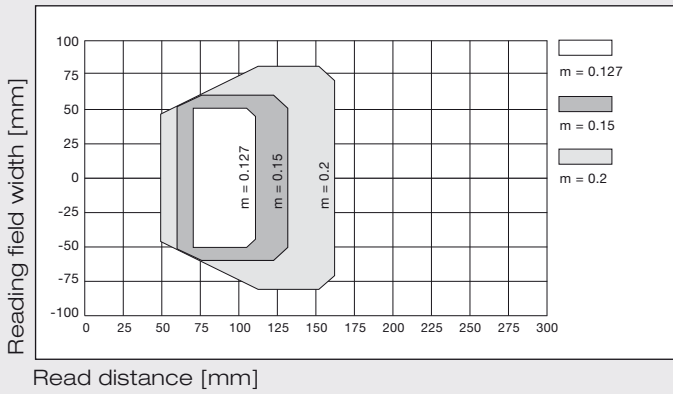

The BCL 300*i* in the world of PROFIBUS/PROFINET.

The integrated Profibus or Profinet makes it possible to configure the BCL 300i directly in the HW Config via the module structure contained in the GSD/GSDML file. The set parameters are stored in the control and automatically transferred to the new device in the event of a device exchange.
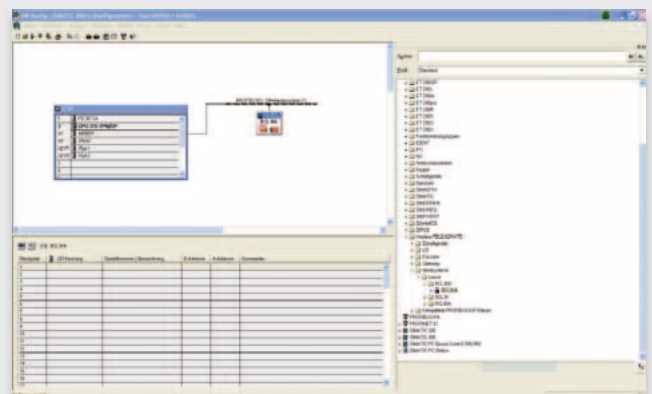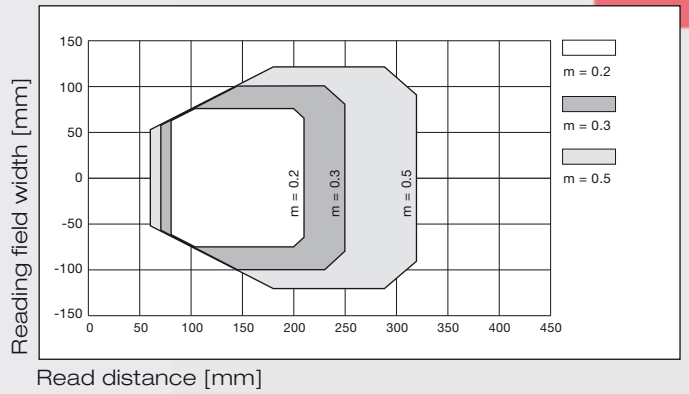
Reading field curves High Density (N)

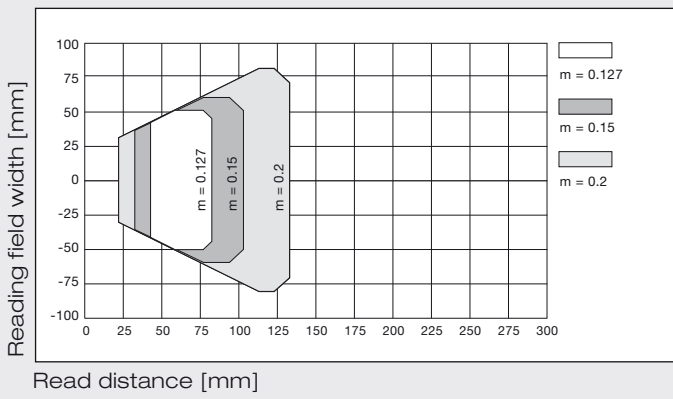### Line / raster scanner without deflection mirror

Reading field width [mm] vs Read distance [mm]

Legend:
m = 0.127
m = 0.15
m = 0.2

Line / raster scanner with deflection mirror

Reading field width [mm] vs Read distance [mm]

Legend:
m = 0.127
m = 0.15
m = 0.2

Reading field curves Medium Density (M)

Line / raster scanner without deflection mirror

Reading field width [mm] vs Read distance [mm]

Legend:
m = 0.2
m = 0.3
m = 0.5

Line / raster scanner with deflection mirror

Reading field width [mm] vs Read distance [mm]

Legend:
m = 0.2
m = 0.3
m = 0.5

Line scanner with oscillating mirror

Reading field width [mm] vs Read distance [mm]

Legend:
m = 0.2
m = 0.3
m = 0.5

Line scanner with oscillating mirror (lateral reading curve)

Reading field height [mm] vs Read distance [mm]

$\delta = \pm20°$

Legend:
m = 0.2
m = 0.3
m = 0.5
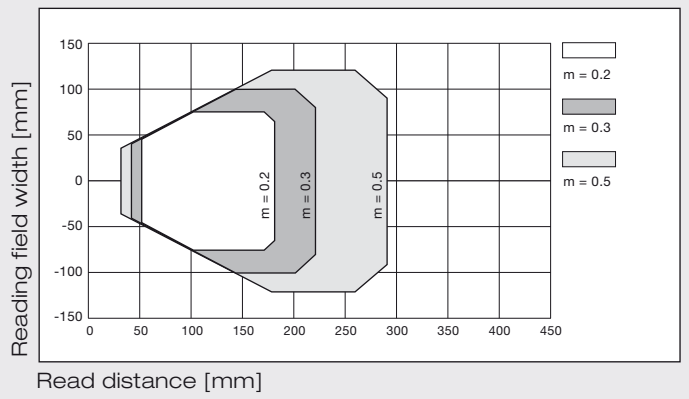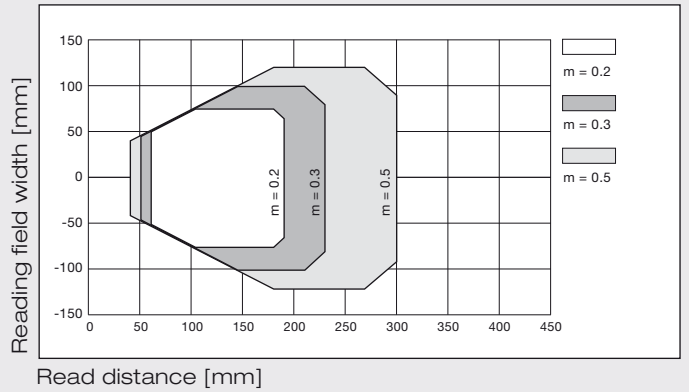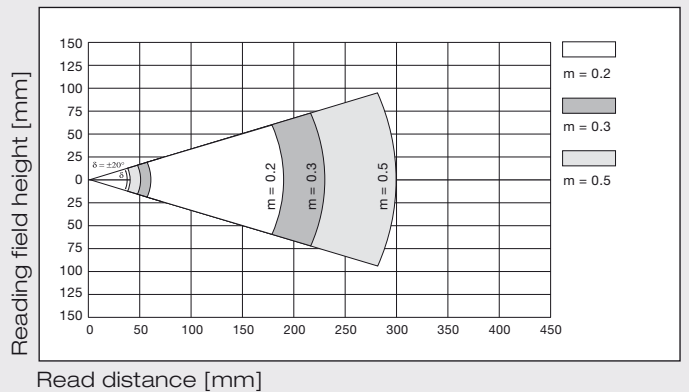
Reading field curves Low Density (F)

Line / raster scanner without deflection mirror

Reading field width [mm]
Read distance [mm]

m = 0.3
m = 0.35
m = 0.5

m = 0.3
m = 0.35
m = 0.5

Line / raster scanner with deflection mirror

Reading field width [mm]
Read distance [mm]

m = 0.3
m = 0.35
m = 0.5

m = 0.3
m = 0.35
m = 0.5

Line scanner with oscillating mirror

Reading field width [mm]
Read distance [mm]

m = 0.3
m = 0.35
m = 0.5

m = 0.3
m = 0.35
m = 0.5

Line scanner with oscillating mirror (lateral reading curve)

Reading field height [mm]
Read distance [mm]

δ = ±20°

m = 0.3
m = 0.35
m = 0.5

m = 0.3
m = 0.35
m = 0.5

Reading field curves Ultra Low Density (L)

Line scanner without deflection mirror

Reading field width [mm]
Read distance [mm]

m = 0.35
m = 0.5
m = 0.8

m = 0.35
m = 0.5
m = 0.8

Line scanner with deflection mirror

Reading field width [mm]
Read distance [mm]

m = 0.35
m = 0.5
m = 0.8

m = 0.35
m = 0.5
m = 0.8

Line scanner with oscillating mirror

Reading field width [mm]
Read distance [mm]

m = 0.35
m = 0.5
m = 0.8

m = 0.35
m = 0.5
m = 0.8

Line scanner with oscillating mirror (lateral reading curve)

Reading field height [mm]
Read distance [mm]

δ = ±20°

m = 0.35
m = 0.5
m = 0.8

m = 0.35
m = 0.5
m = 0.8
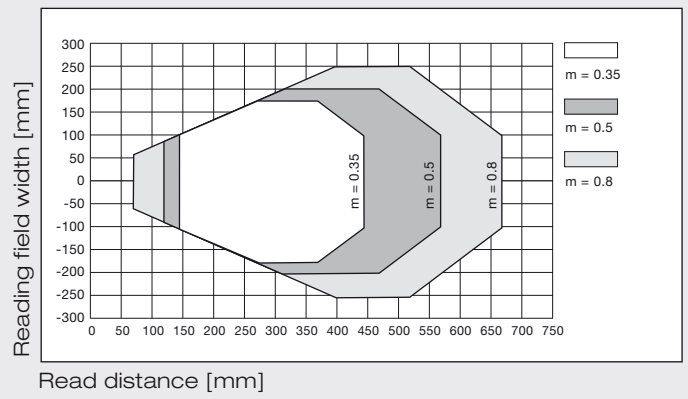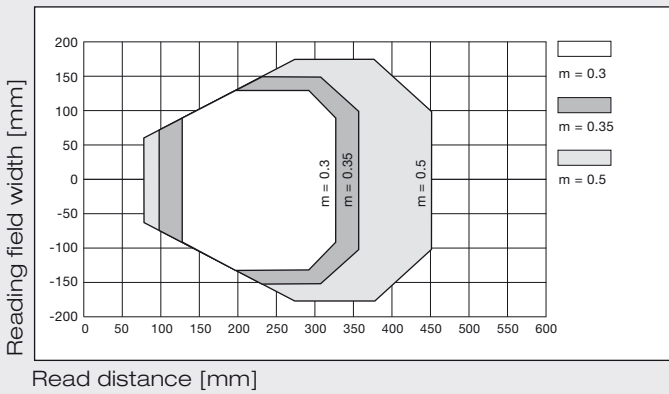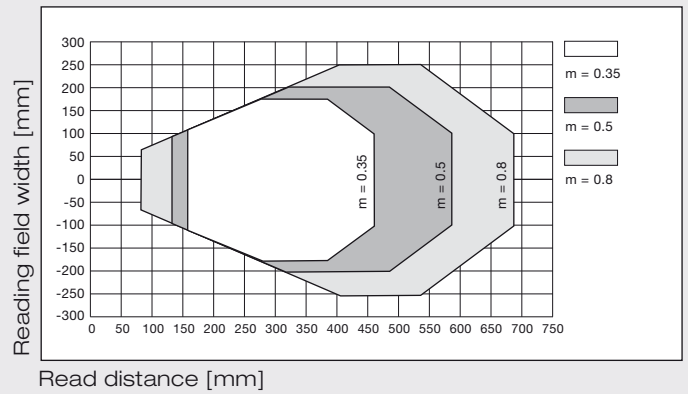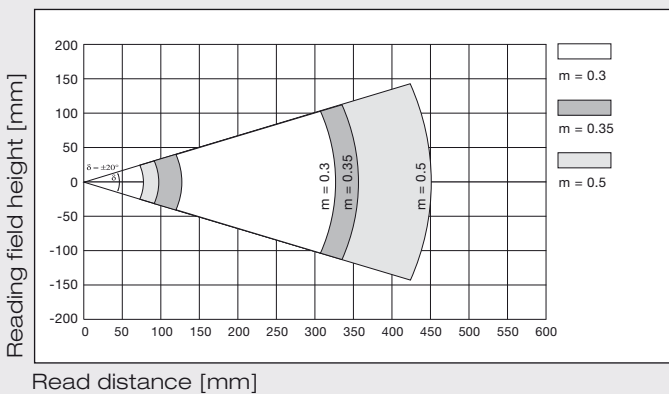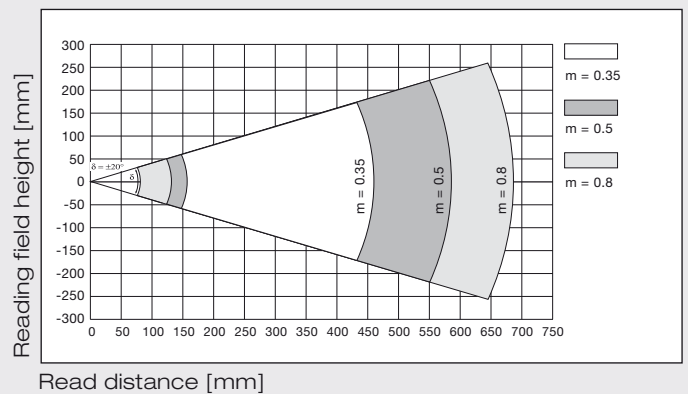
Technical data

Line scanner	BCL 300*i*	BCL 301*i*
Line scanner	**Specifications of the line scanners without heating**	
Design		
Line scanner without heating*	**Stand-alone**	**multiNet plus slave**
Optical data		
Light source		
Beam exit		
Scanning rate		
Useful opening angle		
Optics models / resolution		High Density
Reading distance		
Laser safety class		
Bar code data		
Code types		
Number of bar codes per scan		
Electrical data		
Interface type	External connection box (MA 100) M12 via MS 300 Terminals via MK 300	External connection box (MA 100) M12 via MS 301 Terminals via MK 301
Protocols	Leuze Standard, ACK / NAK, 3964 (R), RK 512, Xon / Xoff	Leuze Standard, Leuze multiNet plus
Baud rate	4,800 ... 115,200 Baud	4,800 ... 115,200 Baud
Data formats	Data bit: 7,8 / stop bit: 1,2 Parity: None, Even, Odd	Data bit: 7,8 / stop bit: 1,2 Parity: None, Even, Odd
Service interface		
Operating voltage		
Power consumption		
Operating and display elements		
Display (optional)		
Keyboard (optional)		
LEDs		
Mechanical data		
Protection class only with MS / MK / KB connection hood		
Weight		
Dimensions (H × W × D)		
Housing		
Environmental data		
Operating temperature range		
Storage temperature range		
Air humidity		
Vibration		
Shock		
Continuous shock		
Electromag. compatibility		
Line scanner with oscillating mirror		
Design		
Line scanner with oscillating mirror w/o heating*	Stand-alone	multiNet plus slave
Optical data		
Beam exit		
Oscillation frequency		
Max. swivel angle		
Electrical data		
Power consumption		
Mechanical data		
Weight		
Dimensions (H × W × D)		
Line scanner with deflection mirror		
Design		
Line scanner with deflection mirror w/o heating*	Stand-alone	multiNet plus slave
Optical data		
Beam exit		
Electrical data		
Power consumption		
Mechanical data		
Weight		
Dimensions (H × W × D)		

* Data for scanners with optics heating, see technical description, download under www.leuze.com

BCL 304*i*	BCL 308*i*	BCL 348*i*	BCL 358*i*
PROFIBUS DP	**Ethernet**	**PROFINET**	**Ethernet IP**
Laser diode λ = 655 nm			
Front			
1,000 scans / s			
Max. 60°			
(N): 0.127 – 0.2 mm; Medium Density (M): 0.2 – 0.5 mm; Low Density (F): 0.3 – 0.8 mm; Ultra Low Density (L): 0.35 – 0.8 mm			
See reading field curves			
2 acc. to EN 60825-1, CDRH (U.S. 21 CFR 1040.10)			
2/5 Interleaved, Code 39, Code 128, EAN / UPC, Codabar, Code 93, RSS 14			
6			
M12 via MS 304 Terminals via MK 304	M12 via MS 308 Terminals via MK 308	M12 via MS 348 Terminals via MK 348	2x M12 D-coded (F)
PROFIBUS DP	Ethernet, TCP / IP / UDP	PROFINET / RT, TCP / IP, UDP	Ethernet IP
9.6 Kbaud – 12 MBaud	10 / 100 MBaud	10 / 100 MBaud	10 / 100 MBaud
Slave DPV1	–	–	–
Mini-B type USB 2.0 socket			
18 … 30 V DC (SC III, class 2)			
Approx. 4 W			
Monochromatic graphical display, 128 × 32 pixels, background lighting (optional)			
2 buttons			
2 LEDs for power (PWR) and bus state (BUS), two-colored (red/green)			
IP 65			
270 g			
44 × 95 × 68 mm			
Diecast aluminum			
0 °C – +40 °C			
-20 °C – +70 °C			
Air humidity max. 90 % rel. humidity, non-condensing			
IEC 60068-2-6, test FC			
IEC 60068-2-27, test Ea			
IEC 60068-2-29, test Eb			
EN 55022, EN 61326-1; IEC 61000-6-2 (contains IEC 61000-4-2, -3, -4, -5 and -6)			
Technical data same as for line scanner without heating with the following differences:			
PROFIBUS DP	Ethernet	PROFINET / RT, TCP / IP	Ethernet IP
Lateral zero position at an angle of 90°			
0-10 Hz (adjustable, max. frequency is dependent on set swivel angle)			
+/- 20° (adjustable)			
Approx. 10 W			
580 g			
58 × 125 × 110 mm			
Technical data same as for line scanner without heating with the following differences:			
PROFIBUS DP	Ethernet	PROFINET / RT, TCP / IP	Ethernet IP
Optical data - beam exit with lateral zero position at an angle of 105°			
Approx. 4 W			
350 g			
44 × 103 × 96 mm			

Switching Sensors
Optical Sensors
Ultrasonic Sensors
Fiber Optic Sensors
Inductive Switches
Forked Sensors
Light Curtains
Special Sensors

Measuring Sensors
Distance Sensors
Sensors for Positioning
3D Sensors
Light Curtains
Forked Sensors

Products for safety at work
Optoelectronic Safety Sensors
Safe Locking Devices and Switches
Safe Control Components
Machine Safety Services

Identification
Bar Code Identification
2D-Code Identification
RF Identification

Data Transmission/
Control Components
MA Modular Interfacing Units
Data Transmission
Safe Control Components

Industrial Image Processing
Light Section Sensors
Smart Cameras