Leuze electronic

HVS
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the sensor people

BCL 500*i* bar code reader

The new generation with a variety of integrated interfaces

Now also with EtherNet/IP™ *inside*
conformance tested

PRODUCT INFORMATION

Connectivity
at its finest.

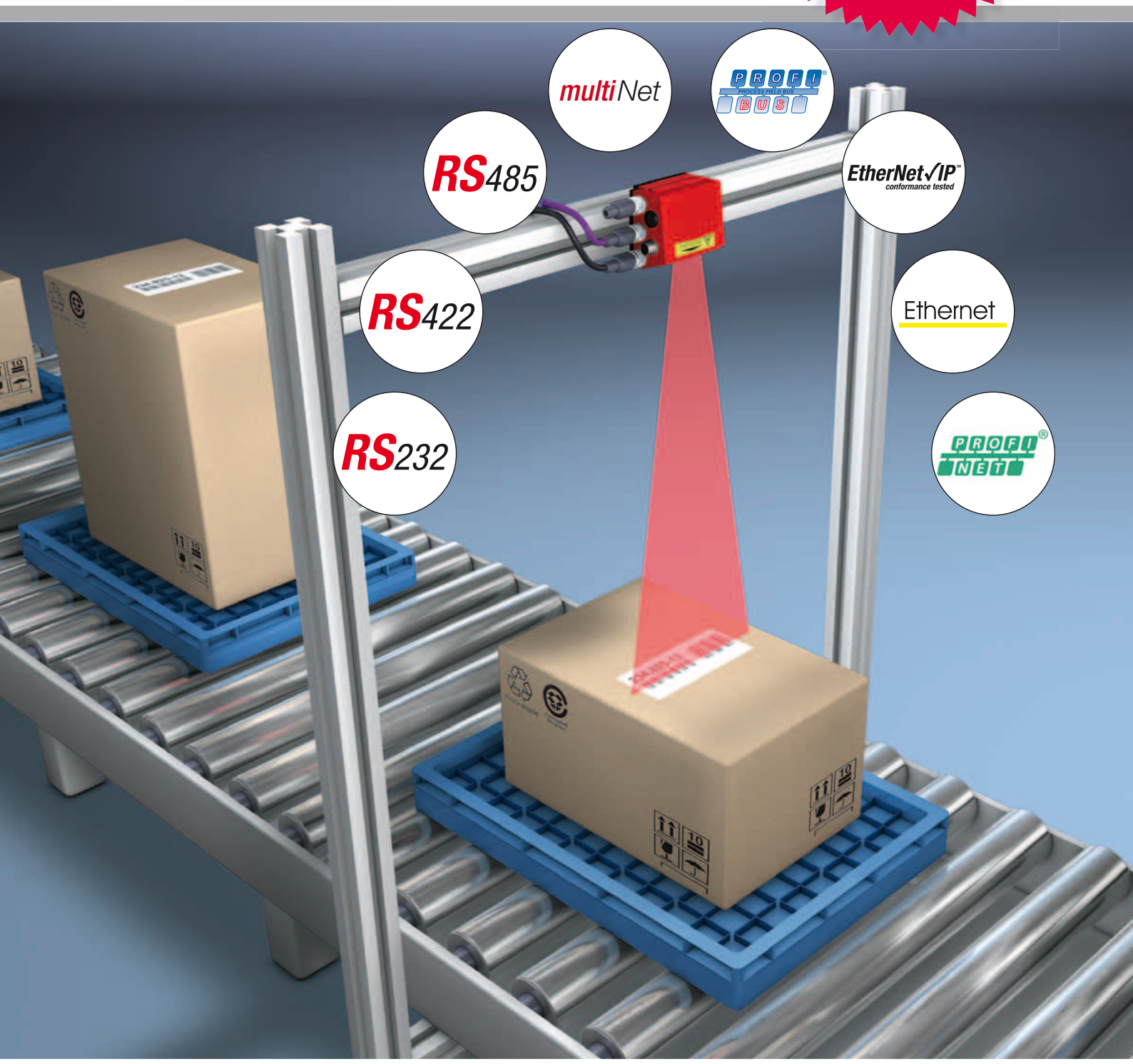
Bar code reader with integrated fieldbus connectivity. The BCL 500*i* series.

Integrated networkability—this is one of the key features of the future-oriented bar code readers of the BCL 500i series. A variety of available integrated fieldbus interfaces greatly simplifies the handling of the systems since time-consuming connections via gateways are eliminated. Commissioning is as simple as connecting to the respective fieldbus system, and configuration can be performed without any additional software.

The new BCL 558*i* now also with integrated Ethernet/IP.

An innovation—the BCL 558i has expanded the BCL 500i series with an integrated Ethernet/IP interface, which enables easy operation and direct communication via the control.
Via an integrated switch, each BCL 5x8i with an Ethernet-based interface can also be connected to other bar code readers in a line or ring structure.
Depending on the interface and control, should it be necessary to exchange a BCL 500i device, the configuration can automatically be loaded onto the replacement device. The connection is performed via a standardized M12 plug and the available ready-made cables. These make wiring economical, transparent and fail-safe.

NEW!
EtherNet/IP inside



Simple handling.

Large variety of interfaces and models.

The main advantages of the BCL 500*i* series.

- Integrated fieldbus and Industrial Ethernet connectivity: PROFIBUS, PROFINET, ETHERNET/IP, ETHERNET TCP/IP and UDP, MULTINET
- Code reconstruction technology (CRT): Facilitates identification of soiled or damaged codes
- High scanning rate of 800–1,200 scans/s (adjustable): Facilitates identification even at very high conveyor speeds
- High depth of field and large opening angle: For wide transport systems
- Simple commissioning and connection using M12-Ultra-Lock™ connection technology and intelligent fastening concept
- Intuitive, multi-language display with menu navigation
- Convenient configuration with the integrated webConfig tool via USB
- Various models: Single line, deflection mirror, oscillating mirror for flexible use
- Optional heating models to -35 °C

BCL 500*i* series
Interface models.

BCL 500*i*

RS232 RS422 multiNet

- Integrated network master for controlling the Leuze multiNet plus network
- Stand-alone operation
- Number of slave participants can be set via the display

BCL 501*i*

RS485 multiNet

- multiNet slave on the Leuze network
- User addresses in the network can be set via the display

BCL 504*i*

PROFIBUS

- Integrated PROFIBUS
- Direct configuration via PROFIBUS
- PROFIBUS user addresses can be set via the display

BCL 508*i*

Ethernet

- Integrated Ethernet
- TCP/IP and UDP
- Baud rate 10/100 MBaud

BCL 548*i*

PROFINET

- Integrated PROFINET
- Integrated switch
- Direct configuration via PROFINET

BCL 558*i*

NEW!

EtherNet/IP

- Integrated Ethernet
- Integrated switch
- Configuration of the communication via Ethernet/IP

Configuration made easy:
BCL 500*i* webConfig.

The fast track to custom bar code reader configuration.

The Leuze electronic webConfig tool integrated in the device provides a web technology-based graphic user interface for configuration of the BCL 500i series bar code readers which is totally independent of the operating system.

Through the use of HTTP as communication protocol and by using only standard technologies on the client side (HTML, JavaScript and AJAX), it is possible to operate the webConfig tool on any PC with a browser without the need for a direct internet connection. The connection to the USB service interface of the BCL 500i series bar code readers is established via the PC-side USB interface using a USB cable.

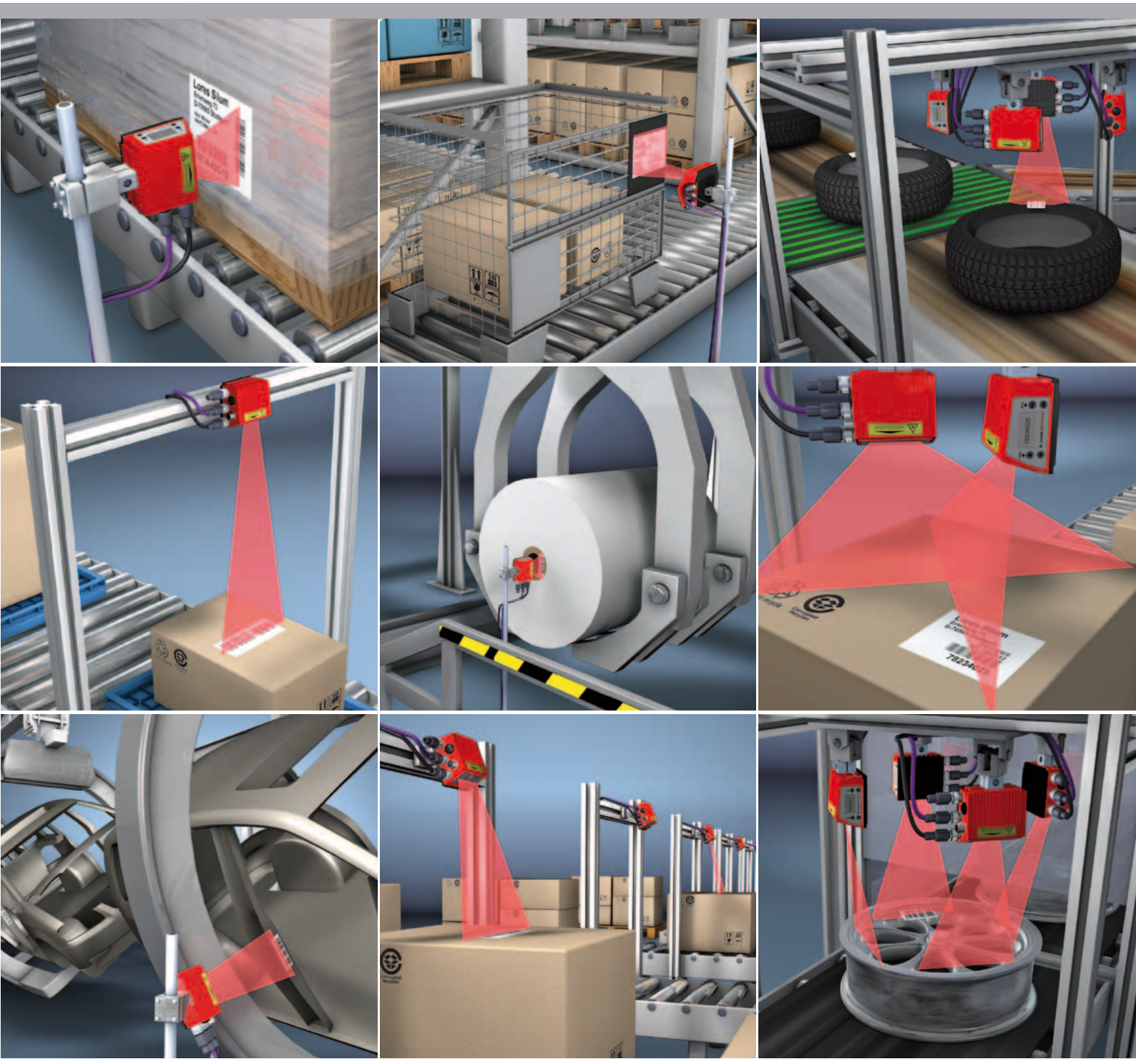
The webConfig tool is accessed via a login which, depending on the authorizations of the currently logged-in user, permits varying levels of access to the individual pages and their contents.

The individual parameters are – where useful – graphically displayed in order to better illustrate the meaning of the what are often perceived as abstract parameters.
The result is an easy-to-use and practically-oriented user interface!

The user interface is divided into various function groups to optimally support the user in the various operating situations.

Limitless possibilities

for your applications.



Technical data

	BCL 500*i*
Line scanner	
Type	
Line scanner without heating*	**Stand alone and multiNet Plus Master**
Optical data	
Light source	
Beam exit	
Scanning rate	
Useful opening angle	
Optics models / resolution	
Read distance	
Laser safety class	
Bar code data	
Code types	
Number of bar codes per scan	
Electrical data	
Interface type	1 x RS232/422 and 1 x RS485 each encoded to M12 (B)
Protocols	Leuze Standard, Leuze multiNet plus, ACK / NAK, 3964 (R) RK 512, Xon / Xoff
Baud rate	4,800 ... 115,400 Baud
Data formats	Data bits: 7,8 / Stop bits: 1,2 Parity: None, Even, Odd
Service interface	
Operating voltage	
Power consumption	
Operating and display elements	
Display	
Keyboard	
LEDs	
Mechanical data	
Protection class	
Weight	
Dimensions (W × H × D)	
Housing	
Environmental data	
Operating temperature range	
Storage temperature range	
Air humidity	
Vibration	
Shock	
Continuous shock	
Electromag. compatibility	
Line scanner with oscillating mirror	
Type	
Line scanner with oscillating mirror without heating*	Stand alone and multiNet Plus Master
Optical data	
Beam exit	
Oscillation frequency	
Max. swivel angle	
Electrical data	
Power consumption	
Mechanical data	
Weight	
Dimensions (W × H × D)	
Line scanner with deflection mirror	
Type	
Line scanner with deflection mirror without heating*	Stand alone and multiNet Plus Master
Optical data	
Beam exit	
Max. optical adjustment range of the beam exit	
Electrical data	
Power consumption	
Mechanical data	
Weight	
Dimensions (W × H × D)	

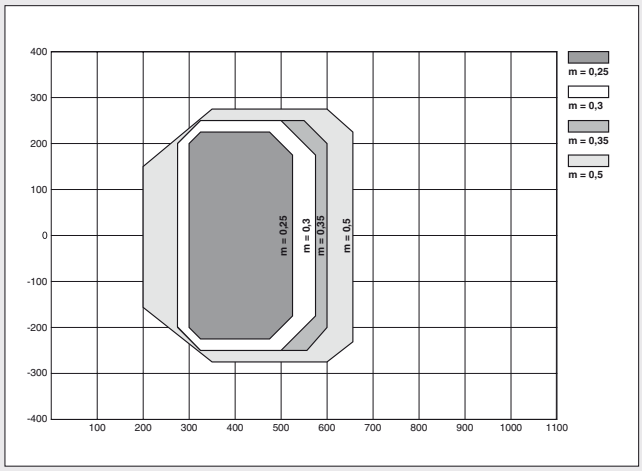
* Data for scanners with optics heating: see technical description, download under www.leuze.com

BCL 501*i*	BCL 504*i*	BCL 508*i*	BCL 548*i*	BCL 558*i*
Specifications of the line scanners without heating				
multiNet Plus Slave	**PROFIBUS DP**	**Ethernet**	**PROFINET**	**Ethernet/IP**
Laser diode λ = 650 nm / 655 nm (red light)				
Front				
1,000 scans/s (adjustable in the range 800 -1,200 scans/s)				
Max. 60 °				
High Density (N): 0.25 – 0.5 mm; Medium Density (M): 0.35 – 0.8 mm; Low Density (F): 0.5 – 1.0 mm; Ultra Low Density (L): 0.7 – 1.0 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				
1 x RS485 encoded to 2 x M12 (B)	1 x RS485 encoded to 2 x M12 (B)	Ethernet encoded to 2 x M12 (D)	PROFINET encoded to 2 x M12 (D)	Ethernet encoded to 2 x M12 (D)
Leuze Standard, Leuze multiNet plus	PROFIBUS DP	Ethernet, TCP / IP / UDP	PROFINET / RT, TCP / IP	Ethernet/IP
4,800 ... 115,400 Baud	9.6 Kbaud – 12 MBaud	10 / 100 MBaud	10 / 100 MBaud	10 / 100 MBaud
Data bits: 7,8 / Stop bits: 1,2 Parity: None, Even, Odd	Slave DPV1	–	–	–
USB 1.1 compatible, A-coded				
10 ... 30 V DC (SK III, class 2)				
Approx. 10 W				
Monochromatic graphical display, 128 × 64 pixel, background lighting				
4 buttons				
2 LEDs for power (PWR) and bus state (BUS), two-colored (red/green)				
IP 65				
1.1 kg				
63 × 123.5 × 106.5 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, Ea test				
IEC 60068-2-29, test Eb				
EN 55022, EN 61326-1; IEC 61000-6-2 (includes IEC 61000-4-2, -3, -4, -5 and -6)				
Technical data same as for line scanner without heating, however with the following differences:				
multiNet Plus Slave	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. 14 W				
1.5 kg				
84 × 173 × 147 mm				
Technical data same as for line scanner without heating, however with the following differences:				
multiNet Plus Slave	PROFIBUS DP	Ethernet	PROFINET / RT, TCP / IP	Ethernet/IP
Optical data—beam exit with lateral zero position at an angle of 90°				
+/- 10° (adjustable via display or software)				
Approx. 11 W				
1.4 kg				
84 × 173 × 147 mm				

The reading field curves

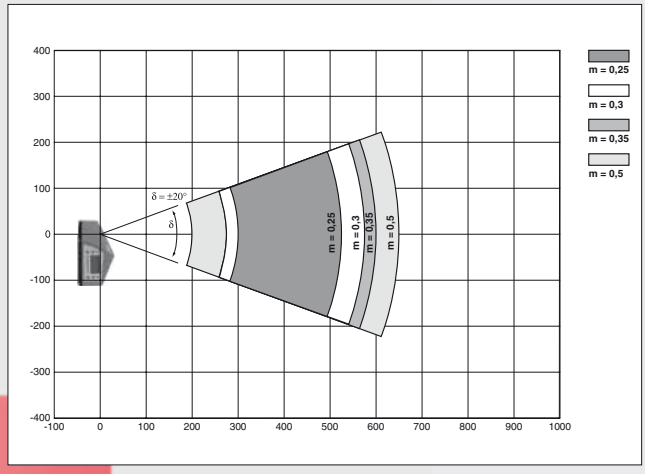
Reading field curve for N-optics

Line scanner with/without deflection mirror or oscillating mirror



Read distance [mm]

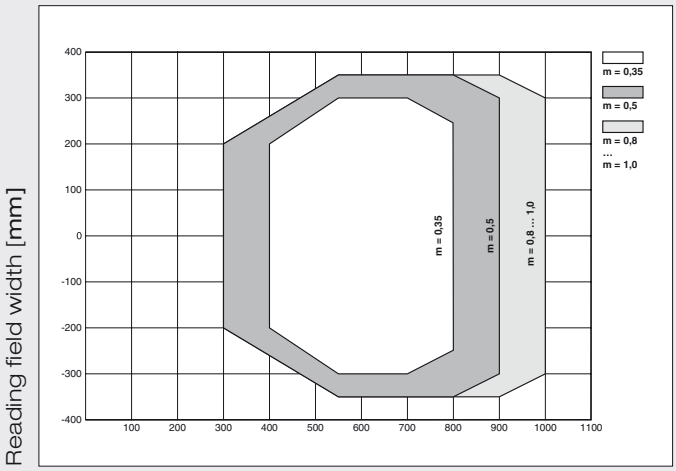
Line scanner with oscillating mirror (lateral reading curve)



Read distance [mm]

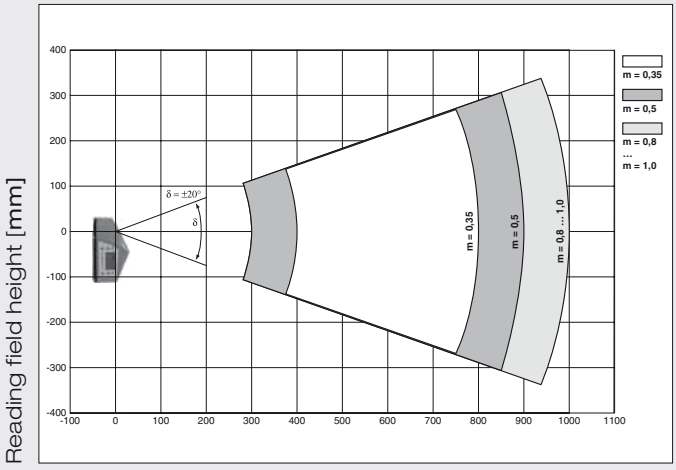
Reading field curve for M-optics

Line scanner with/without deflection mirror or oscillating mirror



Read distance [mm]

Line scanner with oscillating mirror (lateral reading curve)

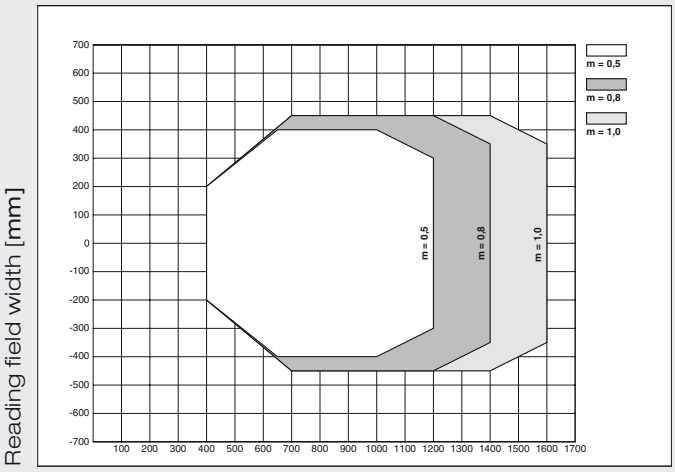


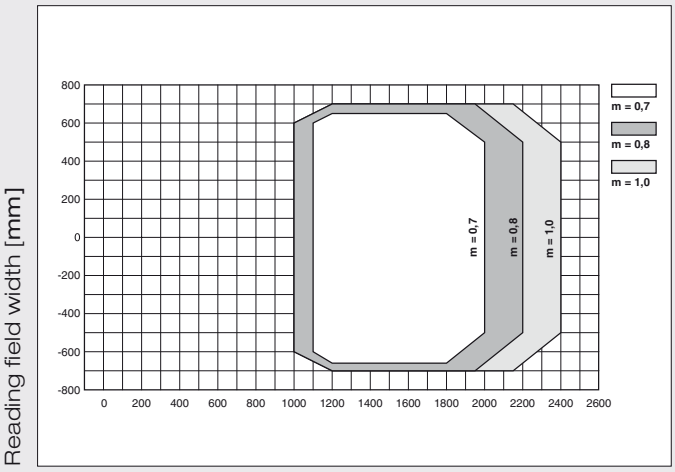
Read distance [mm]

Reading field curve for F-optics

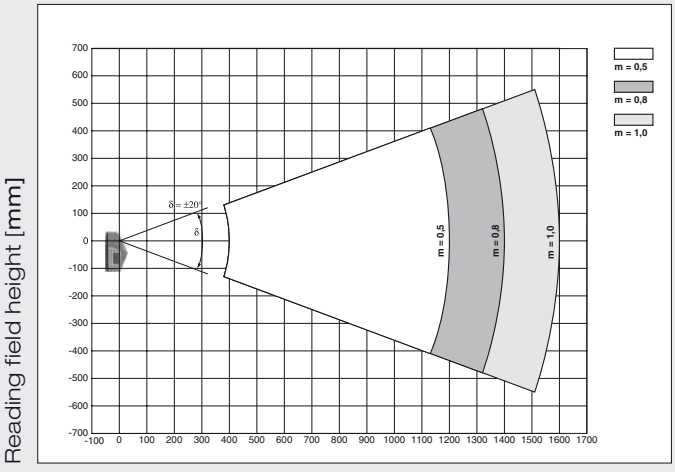
Reading field curve for L-optics

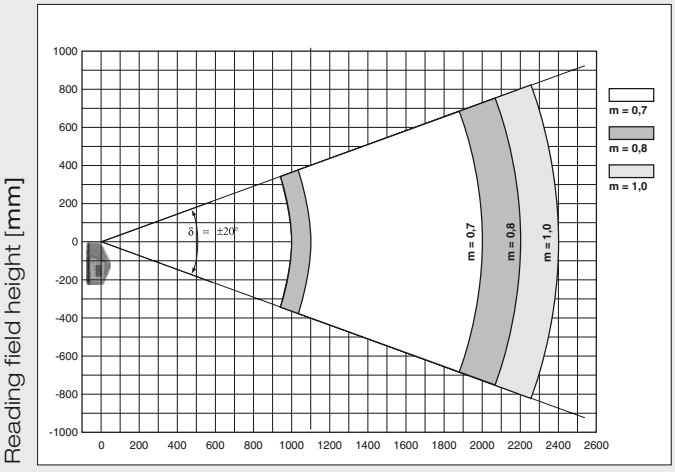
Line scanner with/without deflection mirror or oscillating mirror





Line scanner with oscillating mirror (lateral reading curve)





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 Camera

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