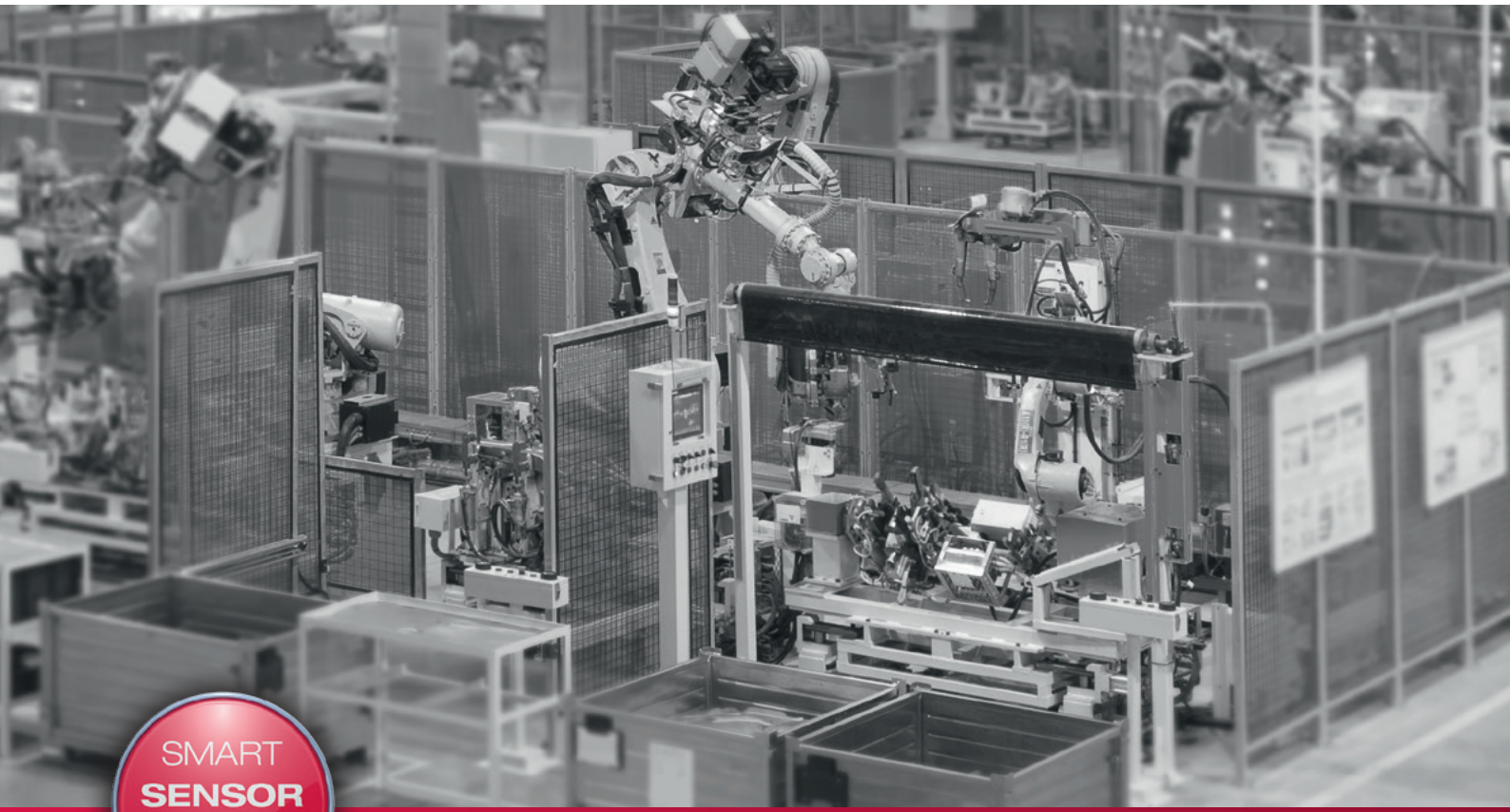
Leuze electronic

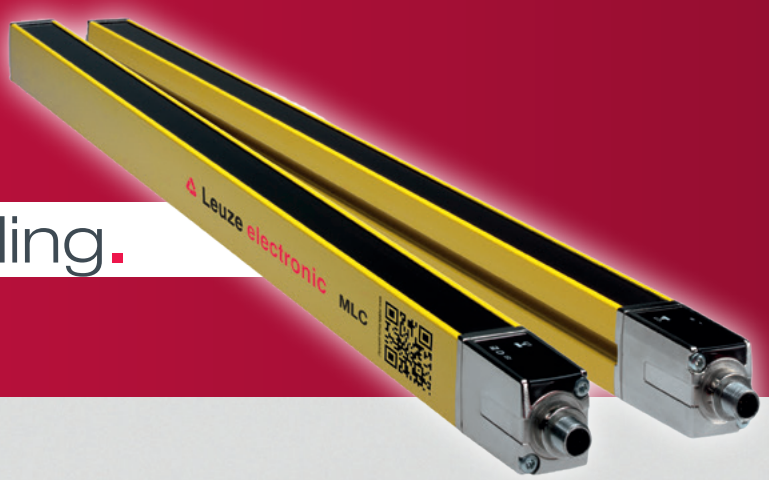
the sensor people



SMART
SENSOR
BUSINESS

MLC 500, MLC 300

Type 4 and type 2 safety light curtains



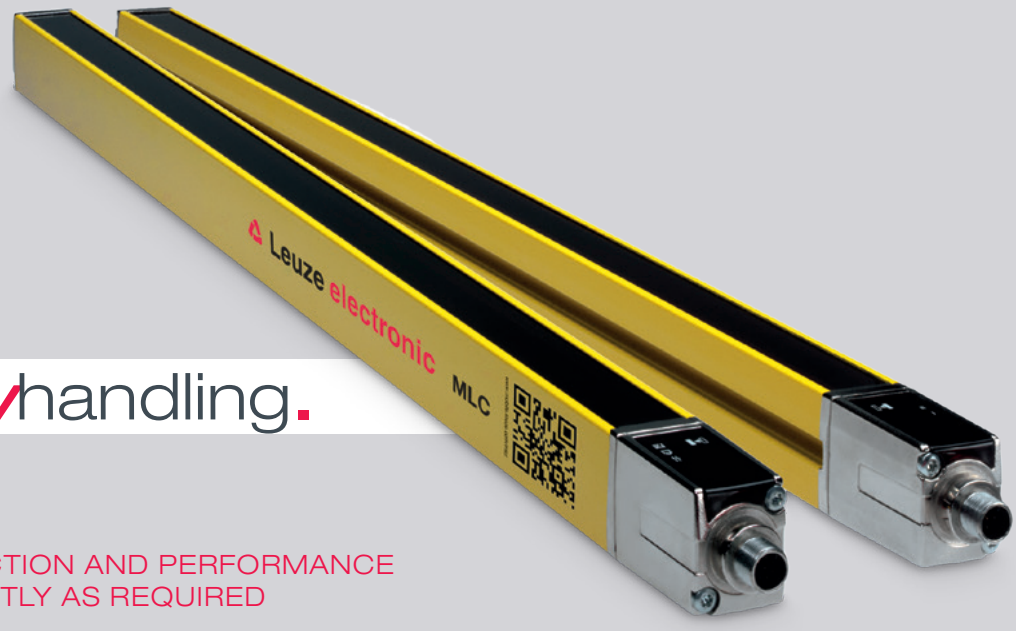
*easy*handling.

www.leuze.com

ПРОМЭЛЕКТРОНИКА / sales@prom-elec.com

ALWAYS ON THE SAFE SIDE

Our MLC safety light curtains offer the right solution for different safety applications.



easyhandling.

FUNCTION AND PERFORMANCE EXACTLY AS REQUIRED

The extensive series offers both type 4 (MLC 500) and type 2 (MLC 300) safety light curtains that leave nothing to be desired in terms of resolution, protective field height and operating range. The compact devices with their slim and robust housing design, slightly set back front screen and reinforced side walls are used for guarding access points, danger zones or points of operation.

The devices reliably meet all requirements throughout the four function classes – Basic, Standard, Extended and SPG. From simple standard applications to controlled special safe guarding. Additional application-specific models offer tailored solutions for particular applications.

UNIVERSAL, INTELLIGENT, ROBUST

Even with the Basic model, the two series' offer the essential basic functions needed for safe guarding points of operation, danger zones and access points by hand and finger detection. The Extended model supports five different operating modes like muting or blanking. This means it offers the ideal basis for efficient integration even into complex processes.

*easy*handling.

- **Easy configuration**
  directly on the device without PC
- **Simple mounting with swivel mounts,**
  robust design and easy alignment,
  optionally with vibration damping
- **LED and 7-segmet display**
  with integrated 3-zone alignment aid
- **Optional external alignment aid**
  for further facilitation of alignment,
  especially over large distances
- **QR code on the device**
  for fast access to service information
- **The MultiScan function**
  offers various scan modes for optimum
  availability in difficult environmental conditions

*think*modular.

- **Four function classes**
  for optimum adaptation to the respective
  application
- **Protective field length in 150 mm grid**
  from 150 mm to 3,000 mm
- **Resolutions from 14 to 90 mm**
  for optimized machine and system design
- **Two solutions for controlled material transport**
  1. Integrated muting function in conjunction with muting sensors
  2. Smart Process Gating (SPG), muting sensors not required

Conformity with standards	MLC 300	MLC 500
Type in accordance with IEC/EN 61496	Type 2	Type 4
Category and performance level in accordance with EN ISO 13849	Cat. 2, PL c	Cat. 4, PL e
SIL in accordance with IEC 61508 and SILCL in accordance with EN IEC 62061	SIL 1	SIL 3
Resolutions [mm]	20, 30, 40, 90	14, 20, 30, 40, 90

A SOLID FOUNDATION FOR ANY SITUATION

The Basic models MLC 310 and MLC 510 provide a solid foundation.

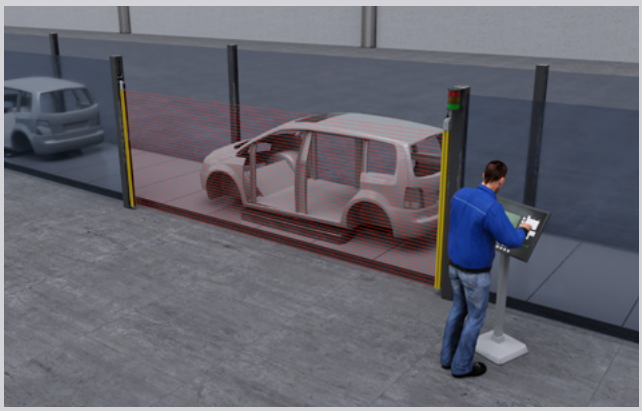
MLC 310 / 510 – THE ENTRY-LEVEL

Even the Basic models MLC 310 and MLC 510 offer numerous intelligent features that significantly streamline handling, ensure high performance and facilitate integration.

- **Optimum handling**
  through configuration without PC
- **Automatic start/restart**
- **LED display**
  for easy status overview
- **Prevention of mutual interference of the sensors**
  by selectable transmission channels and range reduction
- **High temperature range from –30 to +55 °C**
  facilitates cold store use ❄
- **Many mounting options**
  thanks to extensive accessories
- **AIDA-compliant pin assignment**
  4-pin plug version for use in the automotive industry (MLC 311 and MLC 511)
- **Variants with AS-i interface**
  facilitate the direct and economical integration in an AS-Interface network

The QR code allows you to retrieve additional information right from your cell phone, e.g. to diagnose sensor messages. Data sheets and contact information for support from our experts is also available quicker.

MLC 510 Basic model for access guarding on conveyor belts



EVEN STANDARD MODELS ARE IN A CLASS OF THEIR OWN

The Standard models MLC 320 and MLC 520 impress with functional enhancements.

MLC 320 / 520 – THE ALL-ROUNDER

With the start/restart interlock (RES) and contactor monitoring (EDM), the standard model offers additional fundamental functions for easily integrating the devices into the safety circuit.

- **Start/restart interlock (RES)**
  In addition to automatic starting/restarting, the standard models also feature a start/restart interlock that can be enabled on demand
- **Integrated contactor monitoring (EDM)**
- **Easy to read 7-segment display**
  for clear status display and with integrated 3-zone alignment aid
- **Cascadable host-guest models**
  offer economical safeguarding of the front and rear side of machinery using only one connection cable, as well as installing a light curtain around the corner for stepping behind protection

MLC 520-S – EXTRA SLIM DESIGN

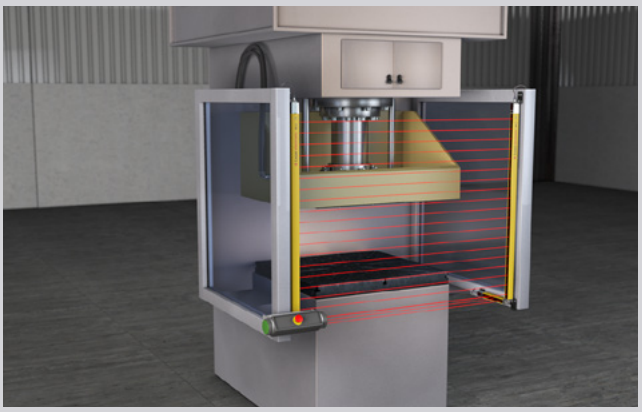
These devices are characterized by their ultra-slim design of only 15.4 x 32.6 mm. They also feature start/restart interlocking (RES) and contactor monitoring (EDM) as well as being cascadable.

- **Extremely slim construction**
  of 15.4 mm and no dead zones on both sides for perfect integration even into compact machine designs
- **Especially fine increments of the protective field length**
  in 30 mm grid for optimum installation in machine openings

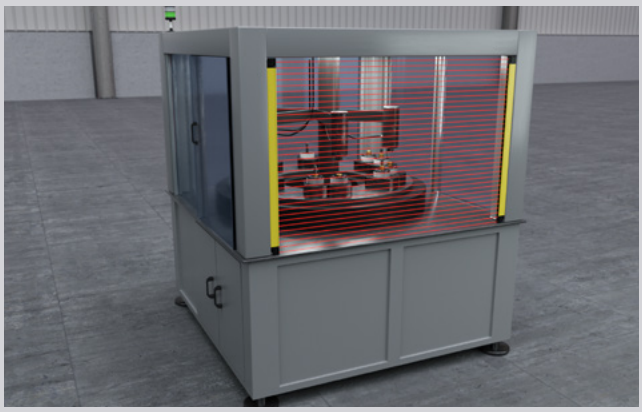
Extremely slim design

Without dead zones

Cascadable models facilitate multiple side safeguarding with reduced wiring effort



The extra slim MLC 520-S model offers perfect integration into the machine design



ADD-ONS USUALLY MATTER

The Extended and SPG* models impress with intelligent additional functions.

MLC 530 – FIVE DIFFERENT OPERATING MODES

Even complex applications with blanking, muting or device linking can be very easily configured via the wiring, without requiring a PC.

- **Optional fixed or floating blanking**
  and reduced resolution, for applications in which objects must be located in the protective field for operational reasons
- **Integrated muting function**
  Time-controlled muting for material transport through the protective field
- **Different scan modes**
  for optimization of availability. Select between SingleScan, DoubleScan or MaxiScan for enhanced robustness, e.g. with flying chips
- **Device linking**
  for the connection of additional safety devices via contact or OSSD output saves cost and reduces wiring effort

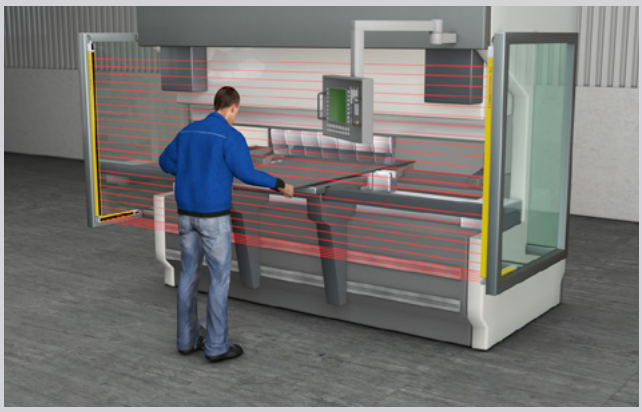
MLC 530 SPG* – EFFICIENT ACCESS GUARDING WITHOUT MUTING SENSORS

This innovative concept uses a control signal provided by the PLC and the protective field interruption to enable material transport.

- **Allows very compact system design**
  and thus saves valuable space
- **High security against tampering and high availability**
  as no additional sensors are necessary
- **No alignment of sensors necessary,**
  e. g. when changing the transport material

*SPG = Smart Process Gating

Efficient sheet metal bending on a press break using blanking



SPG* allows for a very compact system arrangement with access guarding, even in deep-freeze areas as low as –30 °C ❄

THUS SAFETY BECOMES VERY SIMPLE

With the pre-mounted MLC-UDC sets, setting-up and starting-up of safeguarding are easier than ever before.

MLC-UDC – SAFETY LIGHT CURTAIN AND DEVICE COLUMN IN ONE SET

Pre-mounted safety light curtains in robust and flexible UDC device columns – you will get this if you decide on MLC-UDC. You do not need to put together individual components yourself to get a robust and optimally matched complete system.

The pre-mounted MLC-UDC sets for quick and easy installations

EXTENSIVE SELECTION OF MUTING ACCESSORIES

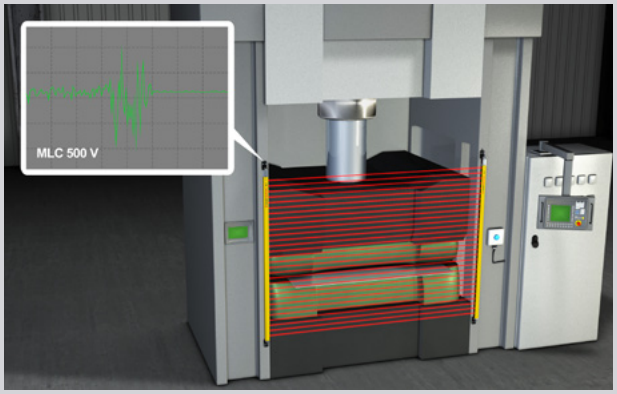
Our extensive selection of accessories and pre-mounted muting sensor sets make installation with muting applications easy

- Device columns
- Pre-mounted muting sensor sets
- Muting indicators
- Display and control units
- Terminal boxes
- Cables

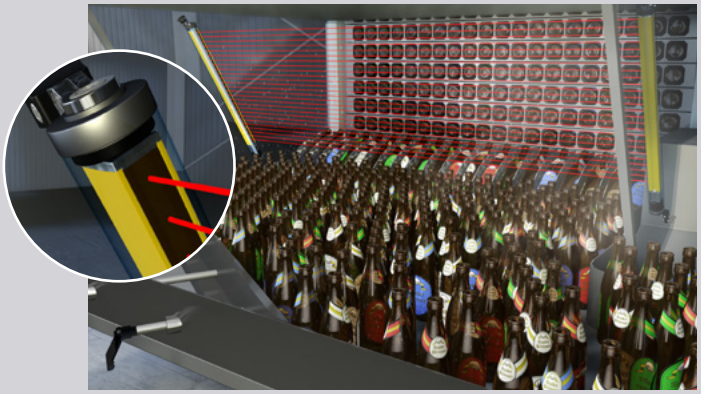
ALWAYS ENOUGH, NEVER TOO MUCH

MLC safety light curtains offer the right solution even for unique safeguarding tasks.

TAILORED SOLUTIONS FOR SPECIAL APPLICATION CASES



- **Increased vibration resistance**
  The optimized design of the MLC safety light curtains in the V-version makes them particularly shock and vibration resistant. This renders them ideal for use on machines where particularly high accelerations or vibrations occur, such as mechanical presses



- **Protection classes IP 67 / IP 69K**
  With this solution, the MLC safety light curtains are pre-mounted in a transparent and encapsulated tube. These safety light curtain solutions thus achieve the highest degrees of protection IP 67/IP 69K and are suitable for use in the food industry, for example

- **Operating temperature down to –30 °C**
  Most MLC 500s feature an extended temperature range, such as for use in cold stores in the food industry

- **Ex-marking in accordance with EN 60079**
  These MLC models are designed for use in potentially explosive atmospheres and comply with the ATEX directive of equipment group II, category 3, zone 2 (gas) and zone 22 (dust).

MLC design with Ex-marking (left) and encapsulated MLC with protection classes IP 67 / IP 69K (right)

IF MORE IS NEEDED

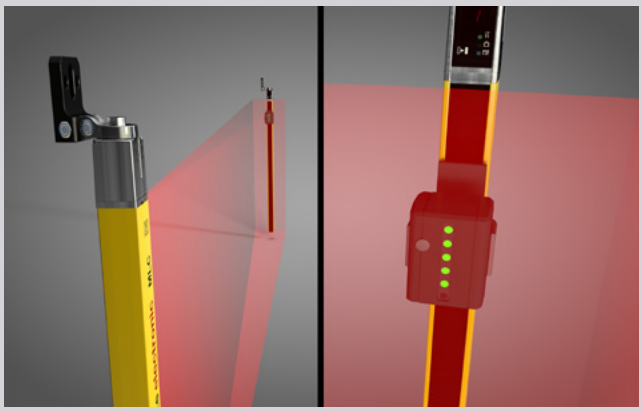
In addition to powerful safety sensor technology, the MLC series also offers a wide range of useful accessories.

EXTERNAL ALIGNMENT AID

- **Easy adjustment even over long distances**
  The handy alignment aid provides fast and reliable support for optimum alignment of the transmitter. Used on the receiving side, it indicates the strength of the received optical signal level via 5 LEDs. At maximum level indication, the transmitter is optimally aligned.

  The supplied mounting bracket allows easy mounting on the front of the MLC receiver.

The external MLC alignment aid is a practical tool to set up large protective fields more quickly



EXTENSIVE SELECTION OF MOUNTING ACCESSORIES

- **Sliding blocks**
  The sliding blocks allow the MLC safety light curtains to be attached directly to the machine or system via the lateral groove. Sliding blocks are included with every MLC.

- **Swivel mounts**
  Swivel mounts offer more flexibility during mounting. They enable the safety light curtain to be easily aligned by means of a rotary movement.

- **Swiveling mounting bracket for lateral attachment**
  In addition to shifting for height adjustments, the swiveling mounting brackets also allow alignment by swiveling by about ± 5 degrees. They also offer additional stability, especially in case of the MLC versions with long protective field lengths.

- **Vibration-damping designs**
  Additional damping elements reduce the transmission of vibrations or shocks to the safety light curtain. Both rotary/swivel and swiveling mounting brackets are available as vibration-damping variants.

TECHNICAL DATA AT A GLANCE

Function class	MLC 310 MLC 510 “Basic”	MLC 320 MLC 520 “Standard”	MLC 520-S “Slim”	MLC 530 “Extended”	MLC 530 SPG
Range reduction on the transmitter	X	X	–	X	X
Switchable transmission channels	X	X	–	X	X
LED indicators	X	X	X	X	X
7-segment display	–	X	–	X	X
Automatic start/restart	X	X	X	X	–
Start/restart interlock (RES)	–	X	X	X	X
Contactor monitoring (EDM)	–	X	X	–	–
Beam blanking, fixed or floating	–	–	–	X	X
Muting function, integrated	–	–	–	X	X
Device linking (safety switch or OSSDs)	–	–	–	X	–
Scan modes (DoubleScan, MaxiScan)	–	–	–	X	–
Versions for special applications					
Extra slim design (15.4 x 32.6 mm)			X		
Cascadable up to 3 devices	–	X[1, 4]	X	–	–
AIDA version	X[1, 2, 4]	–	–	–	–
AS-i Safety interface	X[1, 4]	–	–	–	–
Ex-marking in accordance with EN 60079 (group II, cat. 3D and 3G)	–	X[1, 3, 4]	–	–	–
Protection classes IP 67 / IP 69K (mounted in tube)	X[1, 2, 4]	–	–	–	–
Extra shock / vibration resistant	X[1, 2, 4]	X[1, 2, 4]	–	X[2, 4]	–

General characteristics	MLC 300	MLC 500	MLC 520-S
Type in accordance with IEC / EN 61469	Type 2	Type 4	Type 4
Resolution [mm]	20, 30, 40	14, 20, 30, 40, 90	14, 24
Protective field height	150 – 3,000 mm	150 – 3,000 mm	150 – 1,200 mm
Response time	3 – 51 ms	3 – 64 ms	7 – 17 ms
Operating range, maximum	10 – 20 m	6 – 20 m	6 m
Connection type	M12	M12	M12

[1] Only for MLC 500 series, [2] resolution 14 mm and 30 mm, [3] resolution 20 mm and 30 mm, [4] selected protective field lengths

OUR PROMISE TO YOU

SMARTER **PRODUCT USABILITY**

With regard to our product developments, we systematically place emphasis on the especially good usability of all devices. To this end, simple mounting and alignment are taken into account – just as the uncomplicated integrability of the sensors in existing field bus systems and easy configuration, e.g. via a web browser, are.

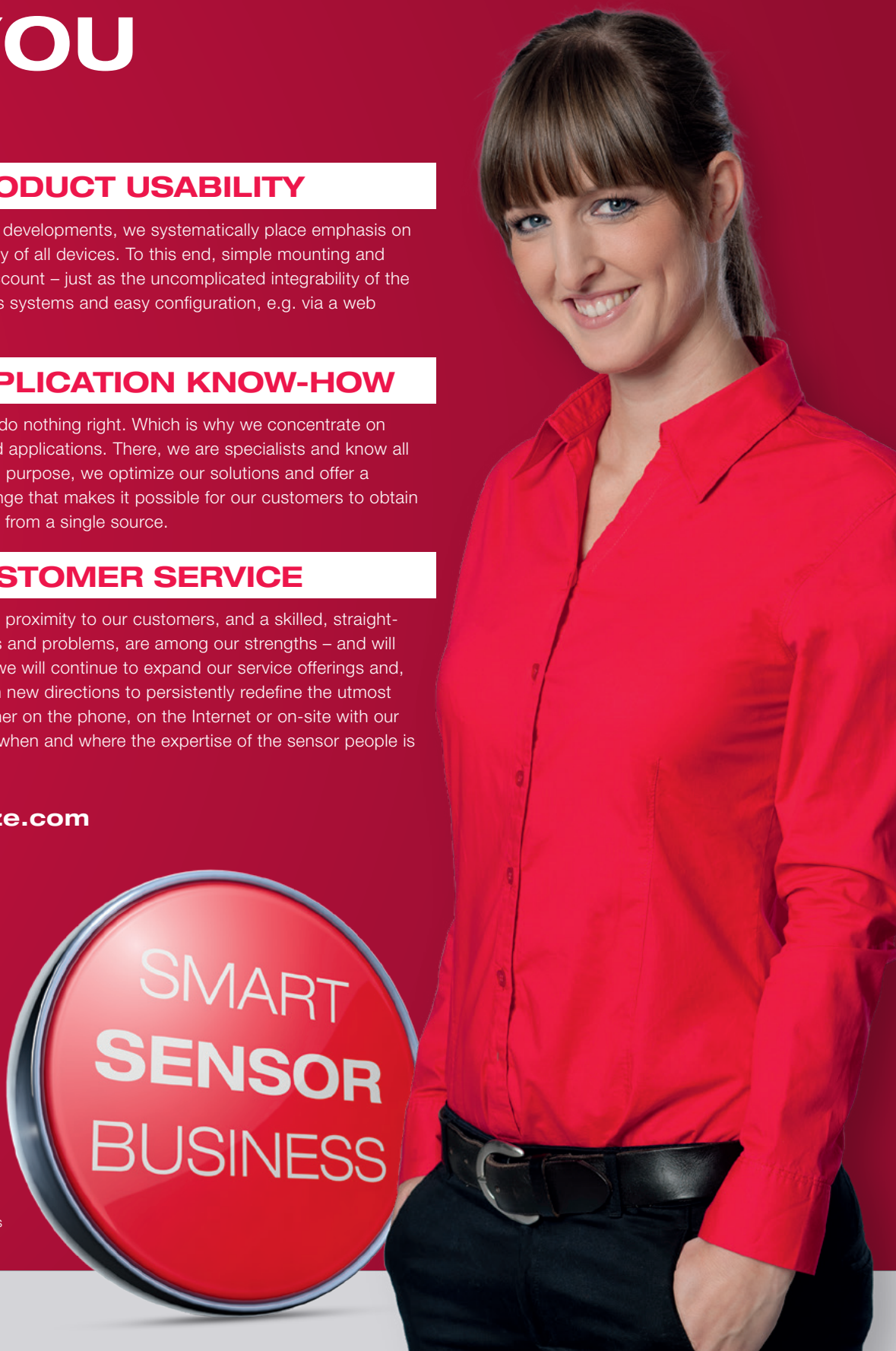
SMARTER **APPLICATION KNOW-HOW**

Whoever can do it all, can do nothing right. Which is why we concentrate on selected target sectors and applications. There, we are specialists and know all aspects inside out. For this purpose, we optimize our solutions and offer a comprehensive product range that makes it possible for our customers to obtain the absolute best solutions from a single source.

SMARTER **CUSTOMER SERVICE**

The technical and personal proximity to our customers, and a skilled, straightforward handling of queries and problems, are among our strengths – and will remain so. Consequently, we will continue to expand our service offerings and, indeed, also forge ahead in new directions to persistently redefine the utmost in customer service. Whether on the phone, on the Internet or on-site with our customers – regardless of when and where the expertise of the sensor people is needed at any time.

Info at: **www.leuze.com**



Katrin Rieker,
Sales Methods, Processes, Tools

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