SMART
**SENSOR**
BUSINESS

# LIGHT CURTAINS

Measuring and switching
light curtains for a wide variety
of applications

# THE CHOICE IS YOURS

Our extensive product family provides you with switching or measuring light curtains.

## ALWAYS THE EXACT FUNCTIONALITY THAT YOU NEED.

Regardless of whether you are monitoring the discharge of a system, monitoring protrusions, heights or lengths or detecting holes – we can provide a professional solution for any requirement with our extensive product portfolio of light curtains. Depending on the application, switching or measuring devices can be used that either just output a hardware signal or transfer a differentiated measurement value to the controller. The appropriate operating principle for the application can be selected on a case-by-case basis due to the identical housing of the CML and CSL devices, without having to re-design the mounting system and the alignment. Some variants are even certified for use in potentially explosive areas, zone 2 (gas) and zone 22 (dust).

# FOUR MODEL SERIES AND NUMEROUS ADVANTAGES

Even if our CML, CSL and CSR light curtains are designed for different applications, they all have basic advantages that can only be found at Leuze electronic.

## *integrated* connectivity.
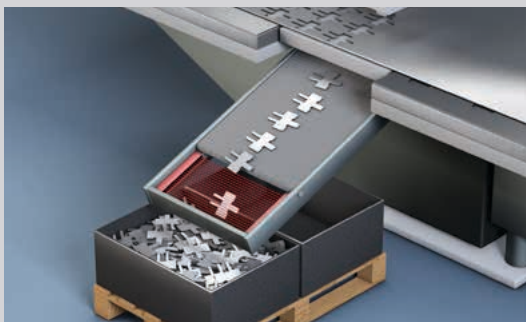
### Measuring light curtain CML 700i

Integrated interfaces

## *power* reserve.

### Switching light curtain CSR 780

Resolution 1 mm, reaction time of 2 ms

## *easy* handling.

### Switching light curtain CSL 710

Operation via display

### Switching light curtain CSL 505

Narrow profile – less space required

# JUST THE JOB WHEN YOU WANT TO MEASURE

As well as well sophisticated installation solutions, the CML 700i measuring light curtain also provides a large quantity of integrated interfaces.

## FLEXIBILITY INSIDE

Both the control unit and the interfaces are integrated in the receiver unit in the CML 700i – making additional devices superfluous. Configuration is carried out directly via the large display, using Leuze Sensor Studio or via the controller, which saves all of the settings and makes it possible for devices to be replaced without having to re-configure.
Numerous interfaces are already integrated.

| Technical data | CML 720i | CML 730i |
|---|---|---|
| Operating range limit (dependent on beam spacing) | 0.1 – 8 m | 0.1 – 10 m |
| Measurement field length | 150 – 2,960 mm | |
| Beam spacing | 5 / 10 / 20 / 40 mm | |
| Response time / beam | 30 µs | 10 µs |
| Voltage | 18 – 30 V DC | |
| Display | 2-line display in 5 languages + LED | |
| Interfaces | PROFIBUS, RS485, IO-Link, CANopen, ANALOG, PROFINET | |
| Outputs | Analog current and voltage 2 or 4 inputs/outputs, configurable | |
| Atex zone 2 (gas) / 22 (dust) | Yes | No |
| Connection | M12 | |
| Transparent media | No | Yes |
| Protection class | IP 65 | |
| Approval | CSA / UL | |

Detection of objects of same height in packaging process
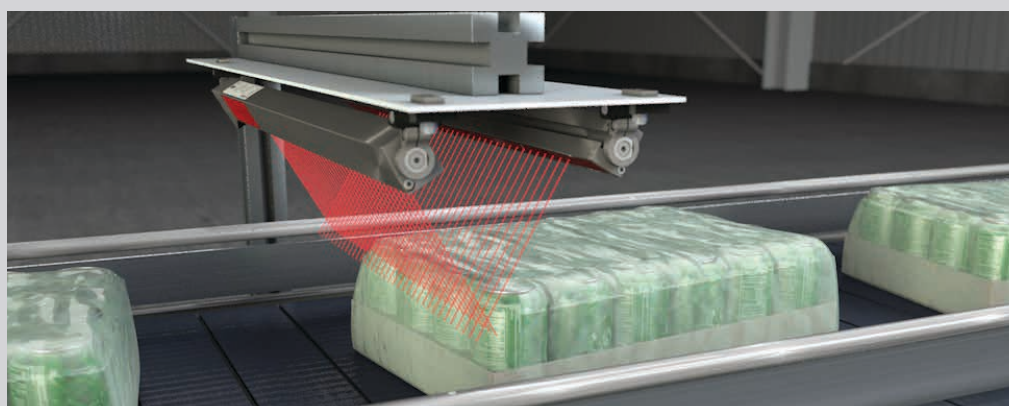
## *integrated* connectivity.

- Integrated interfaces
- Integrated control and evaluation unit
- No additional connection box required

PROFI

$RS485$

⊘ IO-Link

CANopen

ANALOG

PROFINET

## *think* modular.

- Different measurement field lengths
- Various resolutions
- Two response times
- Different interfaces available
- Axial or rear connection

## *easy* handling.

- Direct mounting using sliding blocks or comprehensive mounting material
- Alignment aid and simple configuration using the 5-language display
- Teach function at the push of a button

## *power* reserve.

- Robust, warp-resistant metal housing (like CSL 710)
- Operating range up to 10 m
- Detection of transparent media
- Very short cycle times

## *availability* control.

- Prefailure message in the event of soiling via an output, display or interface

Detection of interruptions



Contour detection of objects

# FAST SWITCHING

The CSL 710 switching light curtain convinces with short response times and easy configuration.

## MUCH MORE THAN ONES AND ZEROS

The CSL 710 switching light curtain can do much more than a standard light curtain, and is therefore the right solution for many applications. Smoothing, block evaluation of up to eight beam areas, power-up teaching and noise suppression can be configured via the display. Various height checks can be taught in easily and assigned to one of the four switching outputs. Furthermore, both device models are fastened with the same mounting bracket and are adjusted identically due to the use of the same housing as the CML 720/730i measuring light curtains.

| Technical data | CSL 710 |
|---|---|
| Operating range limit (dependent on beam spacing) | 0.1 – 8 m |
| Measurement field length | 160 – 2,960 mm |
| Beam spacing | 5 / 10 / 20 / 40 mm |
| Response time / beam | 30 µs |
| Voltage | 18 – 30 V DC |
| Display | 2-line display in 5 languages + LED |
| Interfaces | IO-Link |
| Outputs | 4 inputs/outputs, configurable |
| Connection | M12 |
| Protection class | IP 65 |
| Approval | CSA |

## *think*modular.

- Different measurement field lengths
- Selectable resolution

## *easy*handling.

- Direct mounting using sliding blocks or comprehensive mounting material
- Alignment aid and simple configuration using the 5-language display
- Teach function at the push of a button
- IO-Link as process and service interface for simple configuration
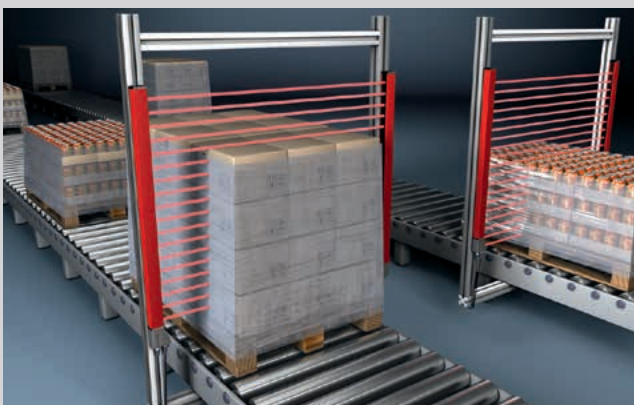- Plug and Play: pre-configured digital IOs for quick operation

## *power*reserve.

- Robust, warp-resistant metal housing (like CML 700i)
- Operating range up to 8 m
- Short cycle time

## *availability*control.

- Prefailure message in the event of soiling via an output, display

Stack height measurement



Width measurement

# VERY FAST AND EXTREMELY PRECISE

The CSR 780 switching light curtain is predestined for object counting and ejection monitoring on machines.

## TRANSMITTER AND RECEIVER IN ONE

Unlike any of the usual light curtains, the CSR 780 switching light curtain works according to the reflection principle. It is therefore a transmitter and receiver in one and does not require a mutually opposing light curtain, only a reflector. It is specialized for object counting on machines or discharge monitoring because of its high resolution and fast response time.

| Technical data | CSR 780 |
| --- | --- |
| Measurement range | 0 – 0.7 m |
| Measurement field length | 96 and 432 mm |
| Object resolution | 1 mm |
| Response time / beam | 2 ms |
| Voltage | 18 – 30 V DC |
| Display | 4 x LED |
| Outputs | 1 signal / 1 warning output |
| Connection | M12 |
| Reflector | Model OCS |
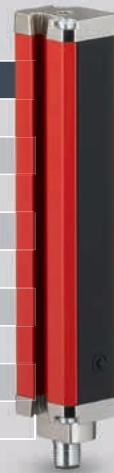
### *think* modular.

- Two measurement field lengths available

### *easy* handling.

- Simple alignment using teach mode
- Standard M12 connection

### *power* reserve.

- Resolution of 1 mm
- Short cycle time

### *availability* control.

- Prefailure message in the event of soiling via an output or LED

# ESPECIALLY SPACE-SAVING

The CSL 505 switching light curtain is the cost-optimized, space-saving alternative for simple applications.

## INEXPENSIVE, VARIABLE AND EXTREMELY COMPACT

The cost-optimized, CSL 505 switching light curtain is specially designed for simple applications. With its slim design, integrated evaluation unit and large opening angle for quick and simple alignment, is can be used for projection monitoring, free field monitoring and object detection.

| Technical data | CSL 505 |
|---|---|
| Measurement range | 0.3 – 5 m |
| Measurement field length | 35 – 3,100 mm |
| Beam spacing | 5 / 12.5 / 25 / 50 / 100 mm |
| Response time / beam | 1 ms (+ one-time 4 ms) |
| Voltage | 24 V DC (± 10 %) |
| Display | LED |
| Outputs | 2x push-pull |
| Connection | M8 or cable outlet |
| Protection class | IP 65 |

### *think* modular.

- Different measurement field lengths
- Selectable resolution
- M8 or cable variant

### *easy* handling.

- Factory configuration
- Slim housing
- Simple M8 connection

### *power* reserve.

- Operating range up to 5 m
- Short cycle time

### *availability* control.

- Prefailure message in the event of soiling via an output, display and LED

# RELIABLY MOUNTED – IN AN INSTANT

Our *easy*handling claim starts with mounting and alignment.

## ACCESSORIES AND MOUNTING SYSTEMS

In order to mount the different light curtains reliably and easily we have developed appropriate accessories for various installation situations, with which our devices cannot only be easily mounted but also aligned.

**BT-2R1 mounting device**
for the mounting of the CML 700i and CSL 710

**BT-SB10 mounting bracket**
for CML 700i, CSL 710

**BT-SB10-S mounting bracket**
for the mounting of the CML 700i, CSL 710

**BT-2L through-hole mounting**
for CSL 710 and CML 700i

**BT-10NC60 sliding blocks**
for mounting the CSR 780

**MD 748i IO-Link master**
for integration in the PROFINET

**Self-supporting UDC device column**
for standing mounting and alignment of the CML 700i and CSL 710

**Large selection of straight or angled connection and interconnection cables**
with M8 and M12 connectors, also with LED

# 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

SMART
**SENSOR**
BUSINESS

**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, Switches and Proximity Sensors
Safe Control Components
Machine Safety Services

**Identification**
Bar Code Identification
2D-Code Identification
RF Identification

**Data Transmission /**
**Control Components**
MA Modular Connection Units
Data Transmission
Safe Control Components
Signaling Devices
Connection Technology and Passive Distribution Boxes

**Industrial Image Processing**
Light Section Sensors
Smart Camera