Sensor solutions
for the graphics industry
All our experience, black on white.
The sensor solutions for the graphics industry from Leuze electronic.

Many good reasons for your success.

In all areas, success is the result of optimal interplay of various factors. For Leuze electronic, they are a broad and closely coordinated product program, applications experience developed over decades, and innovative, market-driven product developments for all common interfaces and network environments. It is the combination of these factors that makes Leuze electronic one of the leading suppliers of optoelectronic sensors. The close contact with our customers and thus your needs and requirements is one of our particular strengths. This doesn’t just apply to technical issues, but also to the service sector.

For more than 40 years, Leuze electronic has been developing and producing optoelectronic sensors, identification systems, image processing systems, data transmission systems and optoelectronic safety sensor systems for industrial automation. Leuze electronic is known worldwide as one leader in innovation for the entire spectrum of optical sensors in factory automation.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web printing</td>
<td>4</td>
</tr>
<tr>
<td>Sheet-fed printing</td>
<td>10</td>
</tr>
<tr>
<td>Further processing</td>
<td>16</td>
</tr>
</tbody>
</table>
Web printing

Smooth processes and faultless results.

Even during reel preparation and reel changes, sensors from Leuze electronic ensure a smooth process through high positioning accuracy and functional reliability. Barcode readers and image processing sensors also ensure reliable identification and assignment. During machine operation, splice-inspection devices, web-tear sensors and web-edge controls constantly monitor the print media and thereby guarantee faultless results. To ensure machine safety, single beam and multiple light beam safety photoelectric sensors, safety light curtains and safety laser scanners are used.
Reel preparation

Cubic series
3B, 25B, 46B series

- Maximum functional reliability
- Simple alignment via brightVision®
- Various ray geometries
- Reliable function with a wide range of surfaces

Reel changing

Measuring sensors
ODSL 30

- Distance-measurement sensors for determining the reel diameter and the reel position
- Measurement ranges from 0.2 – 30m
- Resolution 0.1mm
- Accuracy ± 2mm
- Reflection-independent distance information
- Measurement value display in mm and configuration option via the display
- Analogue output, serial interfaces, switching outputs
Safeguarding by means of reliable XSS/R contour scanning at the reel changer
SAFETY LIGHT CURTAIN
COMPACTplus-XSS/R

- Automatic detection of rectangular objects with closed contours, e.g. printing paper reels, by means of safety light curtain mounted at an incline
- Highest safety level compared to conventional muting solutions
- Saves on muting accessories, very low cabling requirements
- Testing of type 2 protective photoelectric sensors and 2-sensor muting possible

Splice inspection
Ultrasonic system
VSU 12

- Splice detection on paper or plastic webs independent of the surface colour
- Web speeds up to 1,000 m/min (with 30 mm adhesive strip width)
- Automatic adaptation to the medium
- Warning output
**Web edge control**

Optical position sensor  
**OPS 774**

- Measurement field length 20mm
- Resolution <0.2mm
- Maximum linearity
- Reflection-independent edge detection
- Analogue output
- Soiling monitoring

**Paper tear control**

Diffuse reflection scanner  
**IHRT 8**

- Background suppression
- Permanently set scanning range
- Warning output in the event of soiling
- Wire break monitoring
- Resistant glass optics
Copy inspection
Retro-reflective photoelectric sensors
IPRK 25B

- Maximum performance reserves guarantee functional reliability with small or soiled reflectors
- brightVision® for easy handling and fast commissioning
- High availability though active ambient light suppression A²LS
- Reliable function even with glossy objects
- Warning output for contamination message

Automatic printing plate recognition
Industrial image processing
visionPOWERBOX

- Identification of printing plates enables detection of incorrectly mounted plates
- Visualisation of register marks in fast processes
- Presence and position inspection of register marks, also in relation to other characteristic features
Access protection at the printing group

Safety light curtains
SOLID-2, SOLID-2E

- Type 2 self-monitoring safety light curtains acc. to IEC/EN 61496, SIL 2 acc. to IEC/EN 61508
- Slim and robust
- Simple function selection through external wiring
- Maintenance-free thanks to safety transistor outputs (OSSDs)

Transportation path safeguarding during reel transport

Safety laser scanners
ROTONSCAN RS4-4M

- Transportation path safeguarding on side-tracking skate for reel transport, protected field 4 m, warning field 15 m
- Type 3 acc. to IEC/EN 61496, SIL 2 acc. to IEC 61508
- Arbitrary protection and warning field contours configurable
- 8 different protected field pairs, protected field switching during operation possible (state-/speed-dependent)
- Distance measurement for positioning
- Compact design and low power consumption
- Automatic configuration at device exchange via intelligent ConfigPlug device plug
Sheet-fed printing

Reliable detection even with difficult surfaces.

In the sheet-fed printing sector, Leuze electronic sensor solutions excel in, among other areas, stack tracking, stack-height monitoring, double sheet testing and feed monitoring. All sensors also reliably detect and measure modern print media with glossy surfaces or transparent materials. Our measuring sensors specially developed for the industry can e.g. very quickly and precisely measure paper stacks and sheet edges. For danger-area safeguarding, point of operation guarding and access protection, safety light curtains, safety laser scanners and safety photoelectric sensors are used. In “dusty” environments, capacitive sensors ensure trouble-free machine operation. Camera systems and identification systems with barcodes or RFID automate the peripheral equipment and setup operations.
Access protection at the delivery unit

Safety light curtains
SOLID-2/SF

- Type 2 multiple light beam safety devices acc. to IEC/EN 61496, SIL 2 acc. to IEC/EN 61508
- Special solution for access protection at delivery units of sheet-fed printing machines
- Satisfies the requirements of EN 1010-1/-2
- Fast integration through simple alignment, wiring and mounting
- 2- or 3-beam, optionally also as a 4-beam system
- Muting of individual light axes, suitable for the typical operating procedures on delivery units

Area safeguarding at the automatic stack changer

Safety laser scanners
ROTONSCAN RS4

- Safeguarding of broad danger areas
  Type 3 acc. to IEC/EN 61496, SIL 2 acc. to IEC 61508
- Arbitrary protection and warning field contours configurable
- Compact design and user-friendly software
- Automatic configuration at device exchange via intelligent ConfigPlug device plug
- Models with AS-i Safety at Work and PROFIsafe interface available
<table>
<thead>
<tr>
<th>Stack positioning during non-stop stack changes</th>
<th>Stack tracking</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optical distance sensors</strong></td>
<td><strong>Optical distance sensors</strong></td>
</tr>
<tr>
<td><strong>ODSL 96B</strong></td>
<td><strong>ODSL 8</strong></td>
</tr>
</tbody>
</table>

- Wide, rectangular-shaped light spot for measurements on objects with openings, e.g. corrugated cardboard
- Reflection-independent distance information
- Measurement range 150 – 1,200mm
- Resolution 0.1mm
- Measurement display in mm via OLED display directly at the sensor

- Red-light laser
- Measurement range 20 – 500mm
- Resolution 0.1mm
- Analogue output 1–10 V and 4 – 20mA
- Switching outputs
- 2 mutually independent, adjustable switching points
- Absolute measurement accuracy 1%
- Metal housing
Stack-height detection

Stack-height sensor
KA 958

- Exact detection of top edge of stack
- Reflection-independent height detection
- Application-specific construction
- Application-specific light beam
- Measurement range 20mm
- Resolution 0.2mm
- Analogue output

Double sheet testing unit

Double sheet testing systems
DB 14B, DB 12B

- Detection of paper, plastic, corrugated cardboard, foils, and transparent and printed media
- Working range from 20g/m² to 2mm thick cardboard or microcorrugated cardboard
- 1/2 or 2/3 sheet detection, respectively
- Automatic readjustment during the printing process
- Extensive diagnostic options
- Additional special functions
Feed monitoring

Diffuse reflection light scanner
RT 707

- Reliable detection of all print media
- Background suppression for covered feed
- System-specific construction
- High resistance to soiling
- Small construction volume
- Metal housing

Page-edge monitoring

Measuring forked sensors
GS 754

- Measurement field 25mm
- Resolution 14 μm
- Analogue output – current or voltage, or serial interfaces
- Trigger input
Missing sheet inspection

Retro-reflective photoelectric sensors
IPRK 18

- Reliable detection of transparent, printed or glossy foils
- Intelligent sensor with storage of signal states
- Visible red light
- Warning output
- Trigger input
- Robust metal housing

Stack lowering

Capacitive sensor
KK 05

- Capacitive sensor for mass detection
- Resistant to soiling
- Switching state display
- Plug connection
Further processing

Reliable all the way from printing to the final product.

After the material has been printed, sensor systems from Leuze electronic are also used during further processing, such as the capacitive and ultrasonic double sheet testing units used in flat-bed presses. Sheets are checked for presence in cutting machines, folding machines and book-binding machines by sensors which can faultlessly detect a wide range of surfaces. To safeguard dangerous machine processes, safety light curtains and single beam safety devices are also used.
Double sheet testing unit

Double sheet testing systems
DB 112B

- Detection of paper, plastic and metal foils
- Transparent and printed media
- Working range 20 – 800g/m²
- Integrated alignment aid
- Extensive diagnostic options
- Small ultrasonic sensor heads in M12 construction

Presence monitoring

Retro-reflective photoelectric sensors
PRK 3B

- Maximum performance reserves guarantee reliable object detection even with small or misadjusted reflectors
- brightVision® for easy handling and fast commissioning
- Reliable detection of various materials, even transparent or printed foils
- Detection of stretch- or shrink-wrapped objects
- Laser device with autocollimation principle and switching frequency of 2,000Hz available
<table>
<thead>
<tr>
<th>Product counting</th>
<th>Hand/finger protection on paper cutting machines</th>
<th>Access protection at folding/gluing machines</th>
</tr>
</thead>
</table>
| **Diffuse reflection scanners**
HRTR 3B            | **Safety light curtains**
SOLID-4cutter      | **Safety light curtains**
SOLID-4E            |

- Excellent black/white behaviour
- Exact edge detection even with printed products
- High switching frequency of 1,000 Hz for precise positioning
- Exact scanning range adjustment via 8-turn potentiometer
- Large adjustment range from 15 – 200mm
- Version available with small light spot (4mm at distance of 100mm)
- brightVision® for easy handling and fast commissioning

- Custom safeguarding acc. to EN 1010-3
- Type 4 safety light curtain acc. to IEC/EN 61496-1/-2
- Simple connection, various interfaces to the machine (mounting plates, electrical connections, housing colours)
- Robust, powder-coated steel housing

- Type 4 self-monitoring safety light curtain acc. to IEC/EN 61496
- Slim and robust
- Simple function selection through external wiring
- Maintenance-free thanks to safety transistor outputs (OSSDs)
### Identification

**Barcode readers**
- **BCL 8**

- Constantly high scanning rate (500 or 600 scans/s) facilitates reliable reading with fast applications
- Reads all common 1D codes
- M12 connection technology to BCL 8 and MA 8.1 connector unit
- Robust industrial design in metal housing – IP 67
- Integrated functions for very simple commissioning
- Various optics models and extensive accessories increase flexibility in the application

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### Inspection tasks during further processing

**Industrial image processing**

**visionPOWERBOX**

- Reliable detection of incorrect sheets through the use of patterns, plain text or codes (1D, stacked or 2D codes)
- Presence and identification of labels as well as label seating inspection
- Exact presence and position inspections, e.g. a perforation check on forms with respect to registration or print marks
- Various inspection strategies for print-out inspection on small- to medium-sized sheets, ranging from simple presence and position checks to color inspections and print quality control
Optoelectronic Sensors
Cubic Series
Cylindrical Sensors, Mini Sensors, Fibre Optic Amplifiers
Measuring Sensors
Special Sensors
Light Curtains
Forked Sensors
Double Sheet Monitoring, Splice Detection
Accessories
Identification Systems
Data Transmission Systems
Distance Measurement
Barcode Readers
RF-IDent-System
Modular Interfacing Units
Industrial Image Processing Systems
Optical Data Transmission Systems
Optical Distance Measurement/Positioning
Hand-Held Readers
Safety Sensors
Safety Systems
Safety Services
Safety Laser Scanners
Safety Light Curtains
Transceiver and Multiple Light Beam Safety Devices
Single Light Beam Safety Devices
AS-i-Safety Product Range
Safety Sensor Technology for PROFIBUS DP
Safety Switches and Safety Locking Devices
Safety Relays and Safety Interfaces
Sensor Accessories and Signal Devices
Safety Engineering Software
Machine Safety Services