

the **sensor** people

**Optical sensors**  
for detecting transparent  
containers and foils



**I see something** that you can hardly see.

**Experience and technical excellence decide.**

Whenever it comes to the reliable detection of partially and highly transparent objects, sensor systems must show what they are truly capable of. The devices from Leuze electronic offer suitable solutions here for all conceivable applications. Operating with a wide range of technologies, they are able to solve what are, in some cases, very specific problems, and – even in these very challenging areas of application – deliver reliable and efficient results.

What they all have in common is an optimized light-spot profile specially designed for transparent objects, fast commissioning and the unique mounting options for the devices.

**For highly transparent individual containers and bottles.**

8 Series, 18 Series:  
Extremely fast and enormously flexible.



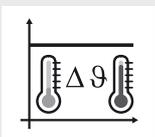
3B Series, 53 Series, 55 Series:  
Our standard for bottle and tray detection.



**For partially transparent individual containers and packages.**

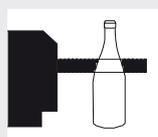
46B Series:  
Scanner for special applications.





### Temperature compensation

Temperature-resistant switching threshold and signal hysteresis for the reliable detection of highly transparent objects, even with fluctuating ambient temperatures.



### User guidance

Convenient user guidance reduces the necessary setup work for highly transparent objects to a minimum and ensures high performance reserves with reduced sensitivity to contamination.

### Tracking PET Glas

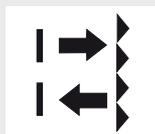
### Tracking

After every object change, the sensor automatically readjusts its switching threshold depending on the level of soiling, thereby extending the maintenance interval many times over, even with 70,000 bottles per hour.

### AutoTeach PET Glas

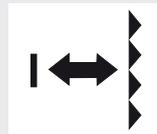
### AutoTeach

Time-controlled inspection and readjustment of a sensor's performance reserve for high detection quality, even with soiling over very long periods of time, e.g., in bottle and can deposit machines and processes in which objects enter slowly.



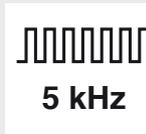
### Reflectors

Optically adapted micro-triad-type reflectors and reflective tapes specially designed for the food & beverage industry ensure reliable and stable, long-term detection of bottles and trays.



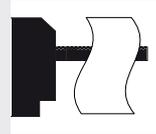
### Optical autocollimation system

Special, highly developed optics concept with just one lens that enables reliable detection of highly transparent objects in the entire detection range.



### Short response time / constant signal jitter

Response time and signal jitter are important sensor characteristics for the consistency of a switching point. Our sensors operate without false triggering even when used in inspection systems with flash lamps.



### Foil sensors

These sensors are optically optimized so that even extremely thin foils with a thickness  $<20\ \mu\text{m}$  can be reliably detected.

## Process stability and precision without compromise.



**PRK 18**

Trigger camera systems, regulate bottle flows, track trays, all in fractions of milliseconds.

For the detection of highly transparent bottles, trays and foils, the right compromise must be found between reliable detection and long maintenance interval. These sensors are specially designed for this. The specific optics system, the temperature-compensating electronics and the optimized operation ensure maximum performance reserve.

Perfect for demanding inspection and triggering tasks.

- Specialist for fast processes
- Metal housing with glass optics
- Highly precise autocollimation principle
- Operating ranges up to 5 m
- Precise adjustment via potentiometer with user guidance
- Analog adjustment range from 4–100 %
- Switching frequency 1.5 kHz
- Temperature compensation ( $\pm 20^{\circ}\text{C}$ )
- Tracking function extends the maintenance interval
- AS-Interface and IO-Link
- ECOLAB



**PRK 8**

Robust and user-friendly.

- Specialist for single-lane bottle transport
- Metal housing with glass optics
- Focused light spot
- Highly precise autocollimation principle
- Operating ranges up to 2 m
- Adjustment via potentiometer or preselector switch
- Switching frequency 1.5 kHz
- Temperature compensation ( $\pm 20^{\circ}\text{C}$ )
- ECOLAB



Universal, because it can be  
**used everywhere.**



**PRK 3B/53/55**

**PRK-Laser 3B**

**Small designs for the detection of highly and partially transparent objects of every type.**

These small designs with automatic teach-in and switching-threshold adjustment are the only devices of this class equipped for stable, long-term operation in the machine.

So small and yet still full-featured.

- All-rounder for bottle detection
- Plastic or stainless steel housing
- Optical autocollimation principle
- Operating range up to 3 m
- Teach-in with switching-threshold correction
- Switching-threshold correction via EasyTune
- Remote teach via PLC
- Keyboard lockout
- 1 kHz switching frequency
- Temperature compensation ( $\pm 10^{\circ}\text{C}$ )
- Teach process for return systems
- Models for the detection of extremely thin foils

Precise through the use of a small laser light spot.

- For exact alignment and for the smallest gaps
- Plastic housing
- Optical autocollimation principle
- Operating range up to 400 mm
- Teach-in
- Remote teach via PLC
- Keyboard lockout
- 2 kHz switching frequency
- Temperature compensation ( $\pm 10^{\circ}\text{C}$ )



Wherever **packages** may sometimes be **transparent**.



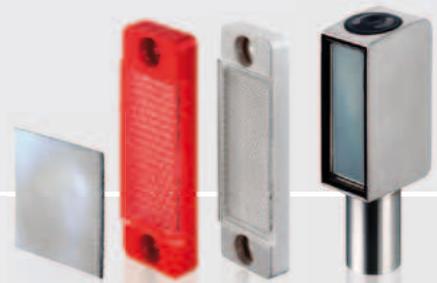
**PRK 25B/46B**

**High performance reserve even with small reflectors.**

In many areas, bottles or other transparent containers are shrink-wrapped and transported and picked as partially transparent packages. Sensors for the detection of transparent, individual containers are therefore overdimensioned. Well-suited for this application are retro-reflective photoelectric sensors in which the configuration options are exactly tailored to such packages.

Reliable function and long-term stability with partially transparent objects.

- The standard in package detection
- Plastic housing
- Operating ranges up to 15 m
- Adjustment by means of 270° potentiometer
- Active suppression of extraneous light A<sup>2</sup>LS
- ECOLAB



**Reflectors**

The right reflector is a decisive factor for the reliable detection of highly transparent bottles, foils and trays.

- TK/TKS standard reflectors for partially transparent packages
- MTK/MTKS micro-triad-type reflectors for highly transparent bottles and trays
- TKS.P/MTKS.P pharmaceutical reflectors are resistant to H<sub>2</sub>O<sub>2</sub> and alcohol
- Foil reflectors, in case there is not enough space for a reflector
- Hygienic reflectors in stainless steel housing



Light scanners are the only solution  
in **special cases**.



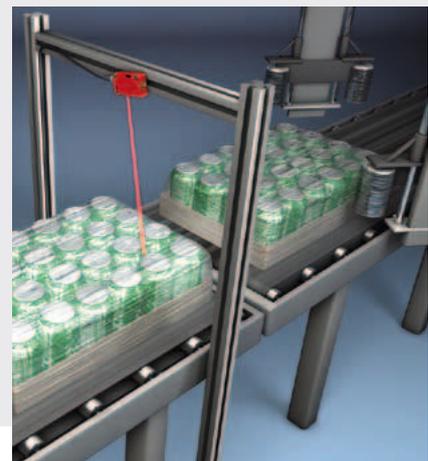
#### HRT 3B/25B/46B

#### For cases where no reflector can be mounted.

Single- or multiple track, detection from the side or from above, whether bottles, syringes, trays or foils. In many areas, it is not possible to mount a separate reflector. In these cases, solution options with scanners should be considered. By means of special light-spot profiles, solutions are made possible that could not previously be realized with scanners.

Special light scanners for highly transparent objects.

- For special applications involving trays, foils and containers
- Plastic or stainless steel housing
- Specific light-spot geometry
- Scanning ranges up to 1 m
- Adjustment by means of potentiometer or teach-in
- IO-Link



## **Optoelectronic Sensors**

Cubic Series  
Cylindrical Sensors, Mini Sensors, Fiber Optic Sensors  
Measuring Sensors  
Special Sensors  
Light Curtains  
Forked Sensors  
Double Sheet Monitoring, Splice Detection  
Inductive switches  
Accessories

## **Identification Systems**

### **Data Transmission Systems**

### **Distance Measurement**

Bar Code Readers  
RF-IDent-systems  
Modular Interfacing Units  
Industrial Image Processing Systems  
Optical Data Transmission Systems  
Optical Distance Measurement/Positioning  
Mobile Code Readers

## **Safety Sensors**

### **Safety Systems**

### **Safety Services**

Safety Laser Scanner  
Safety Light Curtains  
Transceivers and Multiple Light Beam Safety Devices  
Single Light Beam Safety Devices  
AS-i-Safety Product Range  
Safety Sensor Technology for PROFIBUS DP  
Safety Switches, Safety Locking Devices, Safety Command Devices  
Safety Relays  
Sensor Accessories and Signal Devices  
Safety Engineering Software  
Machine Safety Services

Leuze electronic GmbH + Co. KG

In der Braike 1

D-73277 Owen / Germany

Phone +49 7021 573-0

Fax +49 7021 573-199

info@leuze.de

www.leuze.com