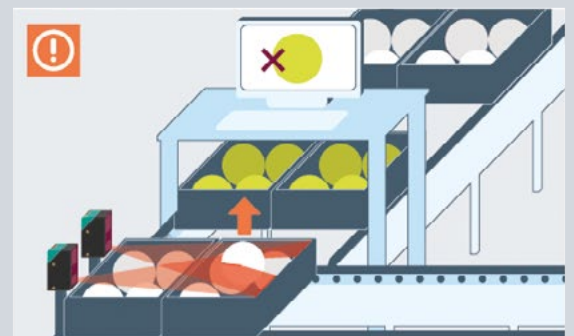
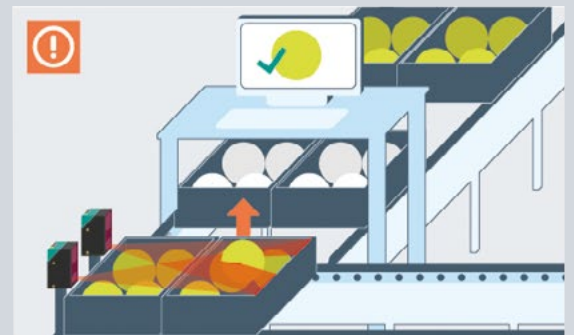
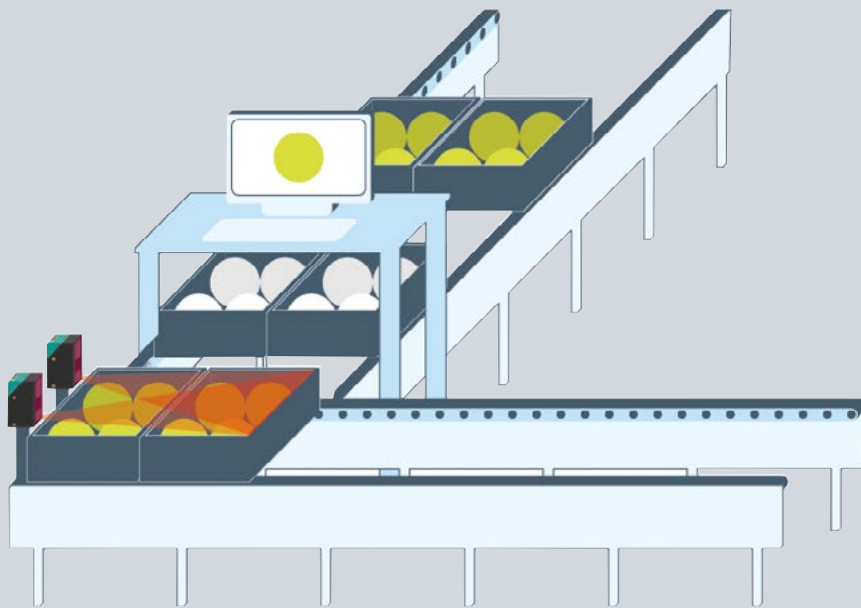


# Quality-Assured Removal Control for Packing Stations

Compact Laser Profile Sensor with  
Adjustable Detection Function

## At a Glance

- Precise alignment of the sensing range to the box opening
- Reliable detection of the employee's intervention, avoiding undetected reaching
- No faulty signal for foreign particles, no disruption due to reflective objects
- Compact device for installation in tight spaces
- Numerous options for data communication
- Easy to install



## The Application

In a packing and picking station, individual products are removed from transport boxes and packed into shipping packages. The boxes are removed on a conveyor belt or roller conveyor. The station is located at a point where the conveyor section bends at a 90-degree angle. In some stations, boxes with two different heights are used. A sensor-based monitoring unit registers removal.

## The Goal

It must be ensured that employees reach into the correct box and remove the appropriate product. The action of an employee reaching into a box must be detected as directly as possible above the box so that undetected reaching below the sensing range of the sensor is impossible. The function of the device used must not be affected by difficult framework conditions such as reflective objects in the box. Accidental activation by foreign particles or flying insects must be prevented. The device should monitor from only one side of the station. Therefore, the sensor must not be divided into emitter and receiver elements as for a light grid. This is especially important when using boxes of different heights. A light grid would have to be aligned with the larger box and would not detect unintentional reaching below the sensing range.

## The Solution

The SmartRunner Detector laser profile sensor combines emitter and receiver in one device. The minimum size of the objects to be detected can be configured: While an employee's hand is detected, smaller particles or flying insects do not trigger a signal. The sensing range can be adjusted and restricted to the opening of the box. A gripping action performed next to the box is not registered as access. Depending on the size of the containers, one or two sensors from one side of the station can completely monitor the area directly above the box. The product indicated by a light spot (pick by light) is always removed. The action of reaching into the box is reliably detected by one or both sensors.

## The Benefits

The SmartRunner Detector combines high-performance laser light section technology with a vision sensor and LED lighting. The emitter and receiver are in the same compact housing. The device has very small dimensions and is ideal for installation in confined spaces. At stations that work with two different box heights, sensors can be mounted on two levels without any problems. Reaching into the sensing range can be read out via the RS485 interface as a 2-D image, which is made available for quality assurance and documentation.

### Technical Features

- Detection of objects from 0.25 mm in size
- Measuring range: X: 40 to 310 mm; Z: 60 to 700 mm
- Easy parameterization with Data Matrix control codes at the touch of a button or via the user interface
- The background can be taught in via sensor buttons or the interface
- Free definition of detectable object sizes and the sensing range (region of interest, ROI)
- Interfaces: IO, RS485
- Fieldbuses via gateways: PROFINET, PROFIBUS, EtherNet/IP, and EtherCAT
- Max. scan rate: 30 Hz
- Laser class 1, IP67 degree of protection

