Solutions, ideas and highlights for packaging industry

Leuze electronic

the *sensor* people

Packaging solutions

Application
• Detect packs on a conveyor

Challenge
• High shining surface; all colors; transparent foils

Solution
• Reference reflective scanner
• HRTR 46B/L.221-S12

Benefit
• Changing packaging materials and goods is possible without any problem

Packaging solutions

Application
• Detect packs on a multi line conveyor

Challenge
• High shining surface; all colors; transparent foils
• Foils own depolarising effects

Solution
•Retro reflective sensors PRK 25B; version .3

Benefit
• Machine works independent from the used wrap material

Packaging solutions

Application
• Cap detection on beverage bottles; at the time only one kind of bottle and cap is used

Challenge
• Missing caps must be detected safely (B)
• Caps can be: **totally screwed** (A), **angular** (C,D) or **partial unscrewed**(E)
• Any kind of bottles, liquid and caps can be in process

Solution
• ODSL 9, measuring with the analog output or IO-Link-data
• If there is no cap you will get a significant different signal

Benefit
• Requirements of the customer are totally fulfilled
• No readjustment with different bottles, liquids, caps

400mm

A   B   C   D   E

Packaging solutions
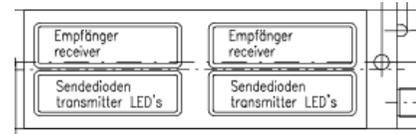
RK 172
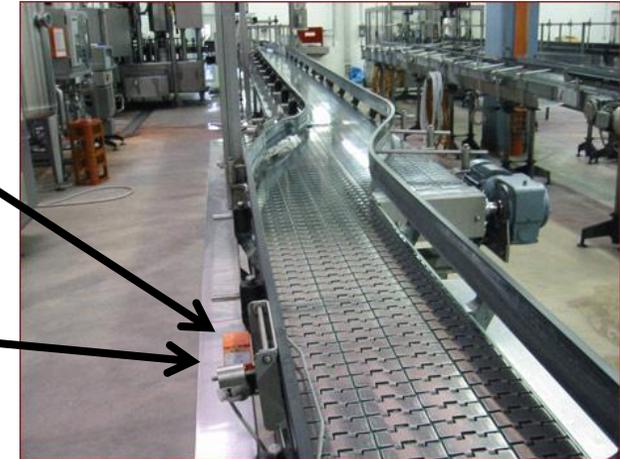
Application
- Bottle mass detection on a belt-conveyor
- Former solution was RK 172 – no following product available
- Often used is a mechanical rocker switch

Challenge
- Detect all bottles independent from form and color

Solution
- Redundant use of 2 HRTR 55 - VXL
- Due to the big light spot transparent objects can be detected

Benefit
- Safe detection due to redundant sensors
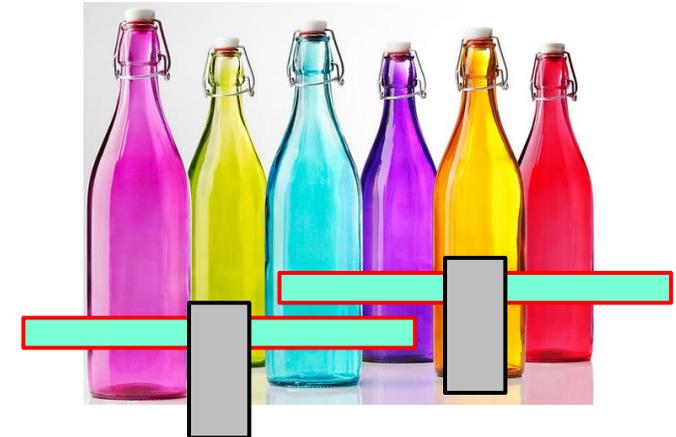
Packaging solutions

Application
• Detection of special test bottles in inspection machines; user must do this following the instructions of the machine builder
• Former solution with RK 18/4G.2 and a special foil; no alternative in the 18 series available

Challenge
• Test bottles must be detected 100% safe
• Leuze foil 4,6 and 7 cannot be used because too inflexible for most of the bottles

Solution
• RKR 18B.1 with foil **Oralite Serie 5400, 5500, 5700** (shiny colors preferred); producer: Orafol (www.orafol.com); unfortunately not available from Leuze

Benefit
• Safe detection of test bottles
• Easy handling of the foil
• Totally tested solution
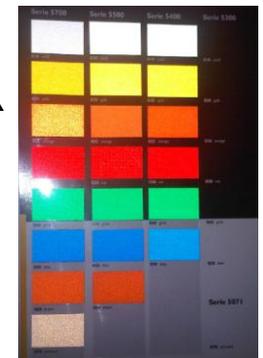
Packaging solutions
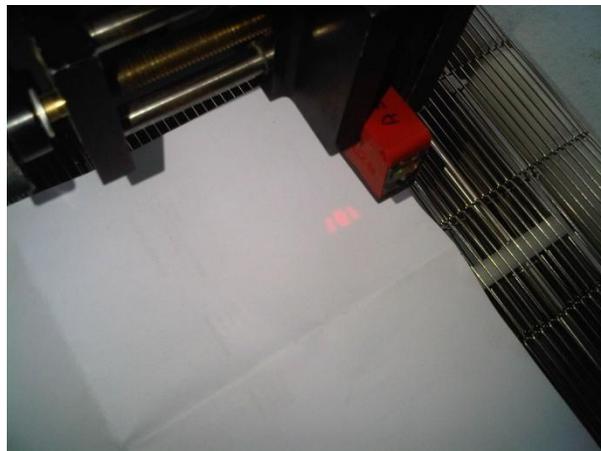
Application

• Detect individual goods on an interrupted conveyor belt (e.g. slices of sausage)

Challenge

• Goods are thin
• Conveyor is high of shining stainless steel and may not be detected

Solution

• HRTR 25B with XL light spot

Benefit

• Machine works safely with any kind of slices
• No readjustment necessary when product changes

Packaging solutions
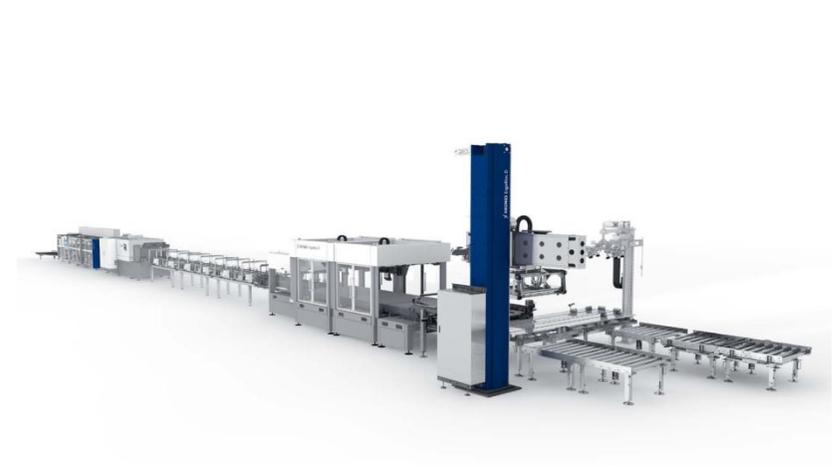
Application

• Detect the filing level on a long cache conveyor for beverage packs. The conveyor may be up to 12m long.

Challenge

• Data must be available very fast and dynamically. Semi transparent packs must be detected as well.

Solution

• Measuring light curtains CML 730, beam distance 10mm, lengths rd. 2000mm, check the whole conveyor

Benefit

• Compared with single sensors the dynamic and overall detection of the filling level allows a much higher overall performance of the whole line,

Packaging solutions
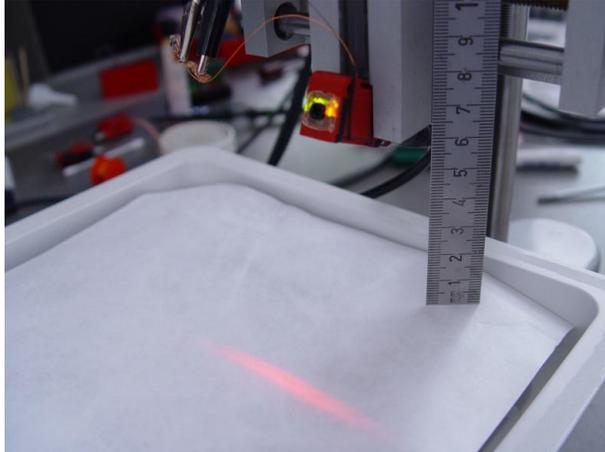
Application
• Protection paper must be detected closely laying upon a mass of test glasses

Challenge
• Paper and test glasses are very close
• Glas containers may cause reflections indicating wrong signals

Solution
• HRTR 3B/66-VXL-S8 ; HRTR 53/66-VXL-S8

Benefit
• Application works very safe
• No downtime caused by wrong signals of normal HRT sensors

Packaging solutions

Application
• Presence of a instruction leaflet must be detected in pharmaceutical packages

Challenge
• Only the leaflet may be detected
• Shiny content in the pack
• In pharmaceutical industry no mistakes are allowed

Solution
• LRT 8, blue filtered

Benefit
• Application works very safe
• LRT will only react on the paper

Packaging solutions

Application
• Position measuring of shrinked can packs at a palletizing robot

Challenge
• All colors, strongly shining foil surface
• Round area at the side targets
• Measuring is only possible from side position

Solution
• ODSL 96B with XL-light spot
• Precision changes depending on the pack; better results than comparable products from P+F

Benefit
• Best achievable solution
• Works reliable close to 100%; 250 sensors in field (2014)

Packaging solutions

Application
- Shingle counting of cardboards/paper

Challenge
- Individual surfaces
- Edges have small difference in heights
- In pharmaceuticak inustry it is not allowed to have any faulty operation

Solution
- OPSL 775 – edge detector

Benefit
- Application is very reliable and stabile
- Minimum difference in height to detect is 0,1mm!
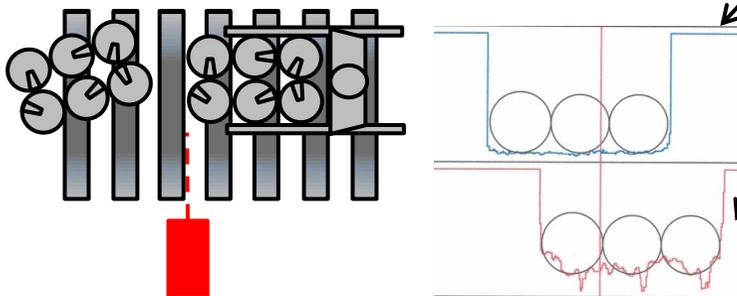
Packaging solutions

Application
• Reagent filling machine - small space

Challenge
• Clear fluid – slightly hazy
• Detection range 200 mm - small beam spot
• Reliable detection of fluid height

Solution
• HRTL 3B/66

•Benefit
• More reliable than fiber sensor-easier to install
• Less expensive
• Easy change out

PICTURES FOR INTERNAL USE ONLY !!

Packaging solutions

Turkey
Caglar Cinkil

Application

• Label detection on a vacuum transfer drum

Challenge

• Arbitrary labels
• Very small distance to the background
• No sensor signal at the milled-out area

Solution

• LVS 462 with KF-ET-300ML-20

Benefit

• More reliable solution than diffuse sensors with background suppression
• Cheap solution
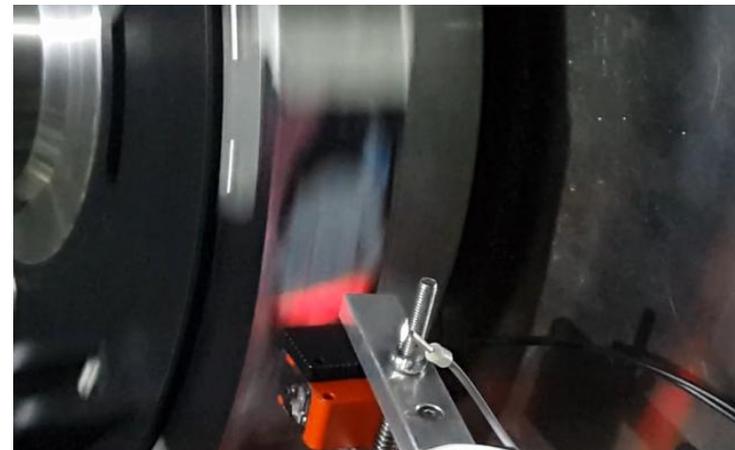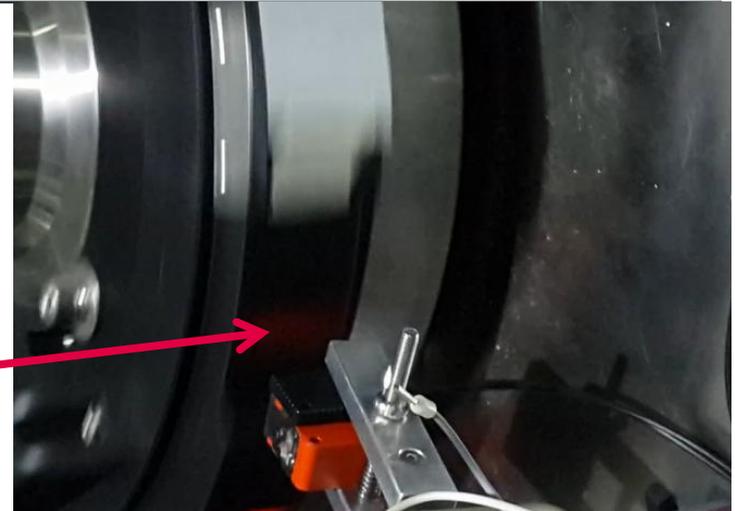
Packaging solutions

Application
• Sorting of cardboard boxes

Challenge
• Detecting 13 different types of boxes
• Environment: food industry
• Profinet / Ethernet communication

Solution
• LSIS 412M43 W1

Benefit
• We offer total integration with a partner.
• Good relation with the customer
• Series 55 is also provided as cross selling
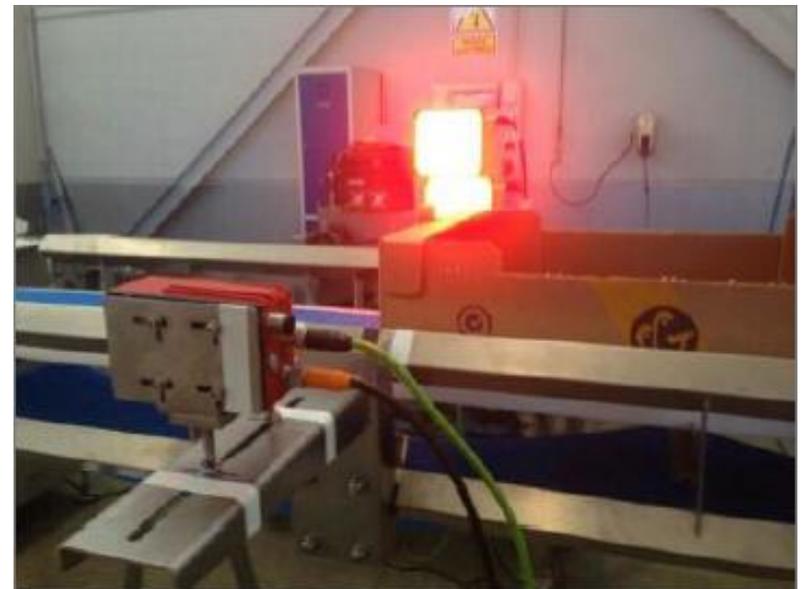
Packaging solutions

Application
• Triggering of packs in metal detectors

Challenge
• Normal sensors like PRK 25B have too small light spot
• Small height of sausage package (10-15mm) – can not be registered by the light spot when being discharged through the pusher
• Solution with RK 46C – optionally two sensors can be installed

Solution
• RK 46C.DXL3/4P-M12

Benefit
•

Packaging solutions

Application
• Label control in cover

Challenge
• Cap's colour might be different and to detect label on cap depending on colour is not reliable.

Solution
• LRT 8

Benefit
• Very reliable solution.
• Cap's colour change is not important.

Packaging solutions

Spain
Joan Martinez

Application

• Check right content and position of content (manually placed) before embedded.

Challenge

• Parts can be found in any place on the conveyor
• Position and completeness has to be checked
• Bright bags

Solution

• LRS 36/6

Benefit

‣ Better Price/Value Ratio compared with other artificial vision solutions
‣ Easy installation & configuration compared to competitor's solutions.
‣ Height and width capabilities

ok

nok

France
Benjamin Lemoal

Packaging solutions

Application
• Measurement of rectangle zone above bottle caps

Challenge
• know the dimensions of the rectangle to organize the various formats on the pallet

Solution
• CML 720i analogue output

Benefit
• increases processing speed

Packaging solutions

Turkey
Fatih Mutlu

Application
• Positioning of aerosol cans by the barcode

Challenge
• High reading performance to create repeatable switching signal
• Exact positioning with +2mm tolerance

Solution
• BCL 8

Benefit
• Easy installation with very small size of BCL8
• Better read position than Sick CLV series

Packaging solutions

France
Jean-Yves Legrand

Application
• Glass bottle alignment

Challenge
• Detection of transparent bottles

Solution
• CML 730

Benefit
•
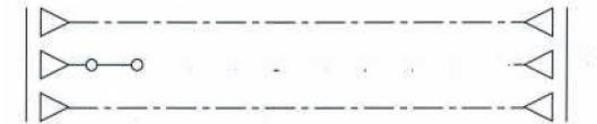
Correct alignment
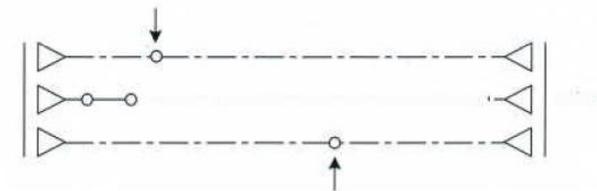
Incorrect alignment

Packaging solutions

Denmark
Holger Jensen

Application
• Reading DPM on beer barrels

Challenge
• High shining surface
• 360° reading

Solution
• LSIS 422

Benefit
•

Packaging solutions

Germany
Waldemar Langer

Application
• Check printing on the cap of a barrel

Challenge
• Different height of the barrels

Solution
• LSIS 462i M43-W1 with 2 LED lights

Benefit
• Easier installation than former fiber products
• Stable performance of KRTM 3B

Packaging solutions

China
Ellis Zhang

Application
• Detect the direction of a packing box

Challenge
• The color & the printing position of the markers would be a little different for each batch.box
• One type of the machine need the long detection range

Solution
• KRTM 3B/2.1121-S8
• KRTL 3B/2.3111-S8

Benefit
• Easier installation than former fiber products
• KRTL 3B with long detection range
• Stable performance of KRTM 3B

Packaging solutions

Mexico
Gustavo Olguin

Application
• Detect of labels in a dispenser

Challenge
• Reading is not very difficult, usually there are black printed marks on white or transparent material

Solution
• KRTL 3B

Benefit
• We obtained better performance than our competitors
• The customer was using optical fibers of keyence, they often had to adjust. With Leuze they only have to record the mark on the sensor and this works perfectly without any problems

Packaging solutions

Germany
Rainer Bräunlein

Application

• Monitoring of flour-dust formation

Challenge

• Monitoring the dust which was not possible to detect with a smoke detector
• Detection over a range of 5m to detect flour when a pipe is broken or not tight
• Detection of broken bags with flour (sensor is under conveyor)

Solution

• PRK 96M/P-1838-41

Benefit

• Cheap and easy solution