



X-RAY INSPECTION

RAYCON

Product family overview

**Sesotec
6-Priority
Concept**



The next generation of RAYCON

Auto-learn function

The Auto-Learn function offers a simple and intuitive operation. The configuration of various filters is performed by the device itself, considerably reducing effort on the part of the user. Even the detection sensitivity is automatically adjusted. Auto-learning takes fewer than two minutes for each new product using five product samples.



New software features

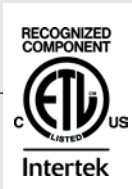
“Bone Detector,” “Wirefinder,” and “Glass Increaser” are new filters that boost accuracy in the detection of specific contaminants. Also available: Sensitivity prediction (configuring the machine virtually, without test pieces); Integrated Compliance Monitoring for extra safety (automatic controls for standard requirements in 10-minute intervals to minimize errors)

Modular build of D+ devices

RAYCON D+ MX and HX have modular builds which allow the systems to be precisely adapted to your production line. They also offer a variety of upgrade possibilities including detectors, cooling devices, conveyance directions, operator panels, rejection units, software features and more.

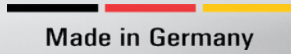
UL/CSA certified

All RAYCON devices are certified with UL/CSA.



Made in Germany

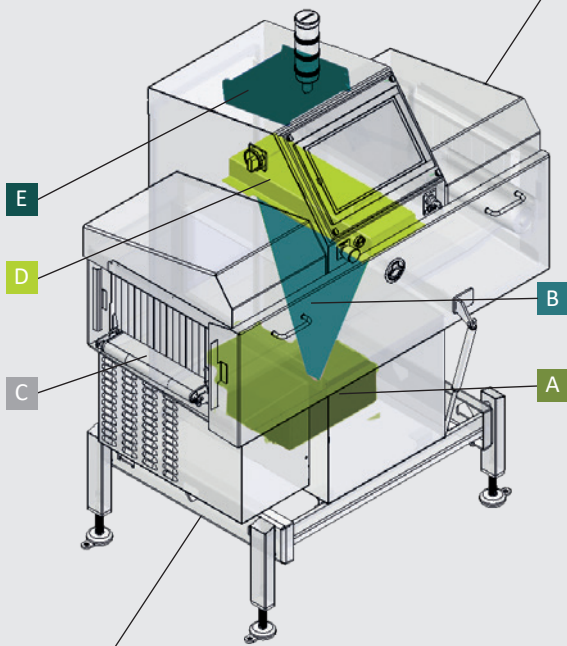
All RAYCON devices are developed and manufactured in Germany.



Functionality

The system consists of these main components:

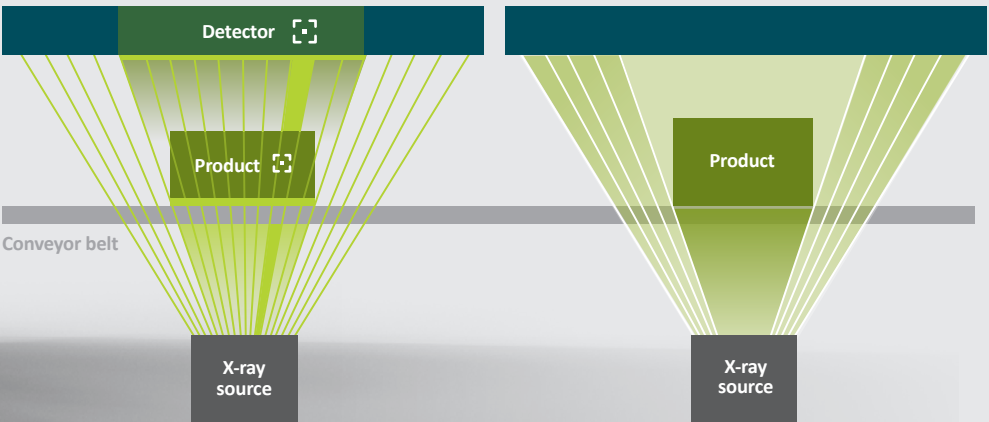
- A** X-ray tubes: Tubes electrically generate the x-ray beams. The beam exits through a small slit and passes through the product, layer by layer from the bottom up.
- B** X-ray beam
- C** Transport system: A self-driven flat belt made from PE transports the products evenly through the x-ray beam. This makes it possible to capture every layer of the product.
- D** Detector unit: The linear detector is installed above the inspection opening and converts the incoming x-ray beams into an electric signal from which an x-ray image is generated.
- E** Industrial PC: Here, the image is analyzed, and the rejection system is triggered as necessary.



Bottom-up technology

The funnel-shaped enlargement of the x-ray beam allows detected contaminants to be viewed in greater detail. This means a 0.8 mm detector can also detect contaminants only 0.6 mm in diameter.

In RAYCON devices, the x-ray source is located beneath the conveyor belt. This eliminates dead corners in tall products.



MAKING THE HIDDEN VISIBLE

X-ray inspection comprehensively designed

Product quality is the top priority of the food industry. In a worst-case scenario, distributing defective goods can have fatal consequences. It can also involve incredibly expensive product recalls, recourse claims, and consumer damage claims. We help give you peace of mind with finely tuned x-ray inspection technology. Our RAYCON x-ray inspection systems were developed specifically for the food industry. They quickly and reliably detect a diverse range of physical contaminants in packaged and unpacked food products, regardless of their size, shape, or position. They can be used in the middle of a production line to inspect bulk materials or pre-products, or for end-of-line final product inspection.

Whether for mid-process inspection of bulk material and pre-products, or end-of-line inspection of packaged foods: our RAYCON systems ensure optimal food safety.

Typical applications in food manufacturing

We support food processors and manufacturers in creating only the best quality products. Our RAYCON systems are designed for use in the following branches:



Meat and sausage



Bread and baked goods



Cheese and dairy



Canned, frozen, and prepared food



Dough products



Ground, hulled, or milled products



Nuts, dried fruit, vegetables



Spices



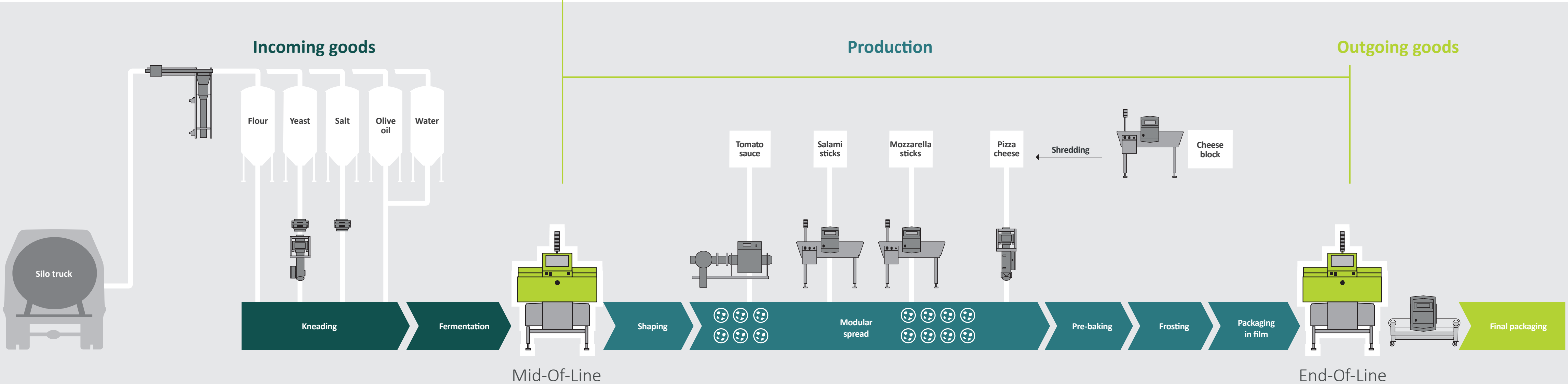
Snacks, cookies, crackers



Sweets



Feed



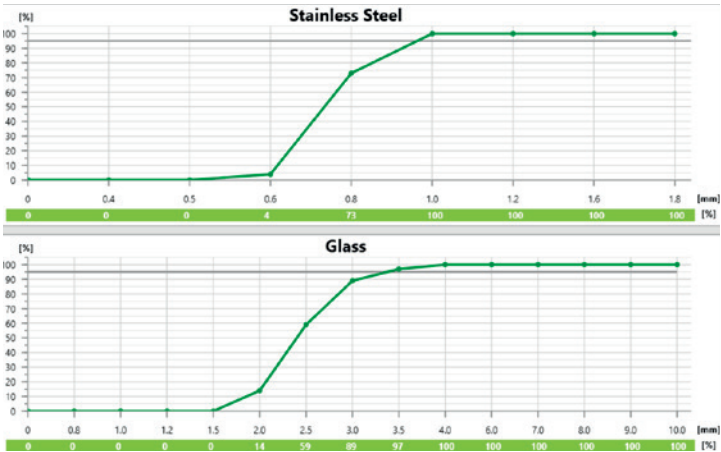
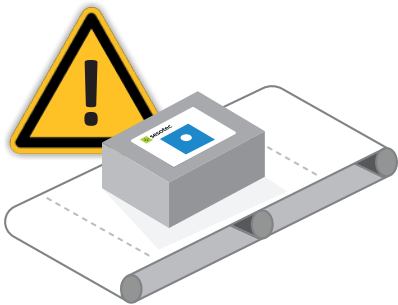
The Compliance Package

Our compliance software package for seamless and efficient documentation consists of the Audit Check, Sensitivity Prediction, Compliance Mode, Integrated Compliance Monitoring (ICM) and Integrated Validation Process (IVP) functions. It helps customers meet food safety standards, increase production efficiency, enhance product quality, and more.



Audit-Check

Quality assurance 4.0: With the help of a process wizard, the Audit-Check leads through the audit routine and logs all steps. This continuous quality monitoring is of enormous importance, especially for food producers and processors, to ensure consistently high product quality.



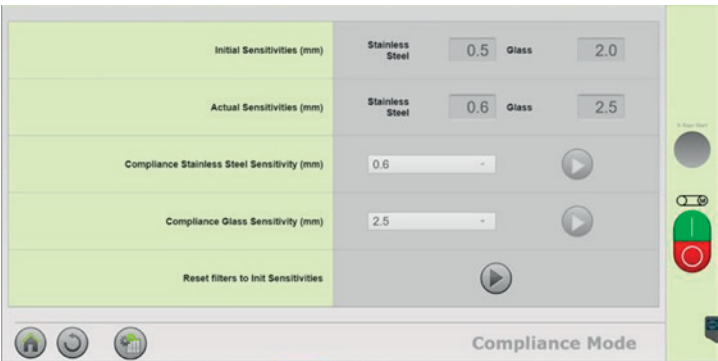
Grafische Darstellung der errechneten Detektionsempfindlichkeiten für Edelstahl und Glas.

Sensitivity Prediction

The „Sensitivity Prediction“ enables automatic determination of the detection sensitivity of stainless steel and glass during an X-ray inspection. The test cards with 100 test bodies made of glass and stainless steel are available in all sizes and stored in the software. This information is calculated along with the product's gray value image as if a product with a test sample were being recorded.

Compliance Mode

In compliance mode, the sensitivity can be set to factory or audit standards at the touch of a button to produce compliantly and at the same time reduce the false reject rate. This ensures that process stability is constantly maintained. In compliance mode, the **X-ray unit** adjusts the software filters accordingly during the teach-in process, to reliably detect the specified test specimens.



Sesotec Compliance Monitoring (ICM)

Integrated compliance monitoring ensures that the specified sensitivities are continuously checked at previously defined time intervals. For this, test bodies stored in the software are compared with the product images and offset against the limit values matched. This monitoring of the detection requirements leads to deviations being recognised immediately and increases the stability of the production process.

Integrated Validation Process (IVP)

The Integrated Validation Process (IVP) provides proof that the desired quality target for the product has been achieved. The customer can validate new products independently with menu guidance and receives a "Report of Validation", but this does not replace the validation certificate for the annual audit by an external service provider (manufacturer).

Advantages for the customer:

- Simplification of complex validation processes
- Reproducible, consistent and tamper-proof results



Report of Validation

Report Number:	Rep_0875412367_25042023_145144	Date of Validation:	25/04/2023 14:51:44
Job Number:	7584	Date of Next Validation Due:	01.01.2024
Company:	Firmenname	Validating Technician:	Service
Address:	Regener Str. 130 Schoenberg, 94513	Contact:	Sesotec Service
		Email Address:	webcontact@sesotec.com
		Telephone:	085543080

Machine Configuration			
Model:	Raycon D+	Aperture Size:	450/250
Serial:	0875412367	Reject Type:	Pusher
Device Name:	Raycon 1	X-Ray Voltage:	50 kV
Line Name:	123456	X-Ray Current:	4 mA

Product Details					
Name:	Pistazienkerne				
Length:	20 cm				
Width:	15 cm				
Height:	5 cm				
Temperature:	20				
Belt Speed:	0.9				
Pack Rate:	100				

Validation Results					
Test Sample Information	Test Sample Identification	Test Sample Density	Testcard	Probability of Detection	Confirmed Rejections
Glass, 2.5 mm	33012776	2.5g/cm³	Single	80	5/5
Stainless Steel, 1.0 mm	33012602	7.9g/cm³	Single	100	5/5

For any questions or to schedule your next validation please contact Sesotec at 085543080 or at webcontact@sesotec.com

Note: The test is performed with the metal sample at the leading edge, middle, and trailing edge of the product (if applicable). The validation was performed with certified test sticks which comply to NIST standards. Metal Detection results can be impacted by the product signals, the results listed above are based on the specific product that was used during this Validation process.

THE SESOTEC 6P CONCEPT

YOUR PRIORITIES. OUR ANSWERS.

For the development of the new RAYCON generation, we had one major focus: your priorities. In-depth analysis and customer interviews revealed six main requirements for foreign object detection. With this as our basis, we intensively researched possible solutions. Thus, the Sesotec 6 Priority Concept was born as a way to offer practical answers to your challenges.

Sesotec 6-Priority Concept



Conformity & accuracy

Reliable detection of metallic and non-metallic foreign bodies in the entire inspection area is a requirement for achieving conformity with all of the most common food safety standards and guidelines.



Safety for people & products

Thanks to highly effective radiation protection and precision x-ray dosing, RAYCON enables all-around safe operation for people and products.



Simple operating concept

A large touchscreen, easy-to-understand user instructions, and features such as Auto-Learn, the RAYCON offers intuitive operation for everyday use.



Hygienic design concept

Open modular design provides for easy access to the conveying area in the product zone without tools for simplified cleaning and maintenance.



Efficiency in all areas

High speeds and multi-lane capabilities make it possible to perform a real-time inspection of as many as 1500 products per minute on up to four parallel lines.



Reliable & fast service

Between warranty services, a combination of onsite and remote servicing, and targeted trainings, you have the optimal support to keep your operation running smoothly.





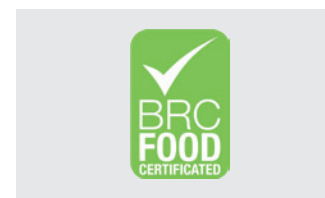
Conformity & accuracy

RAYCON supports and facilitates compliance with necessary food safety standards and laws.

RAYCON exceeds international standards

With a RAYCON device, you can rest assured that you are conforming to international food safety standards.

- **BRC-, IFS- and HACCP compliance** (exceeds the requirements for detection accuracy stipulated in all common food safety standards)
- **Higher Level Security Package** (Quality standards from Marks & Spencer) is included as standard in all devices.

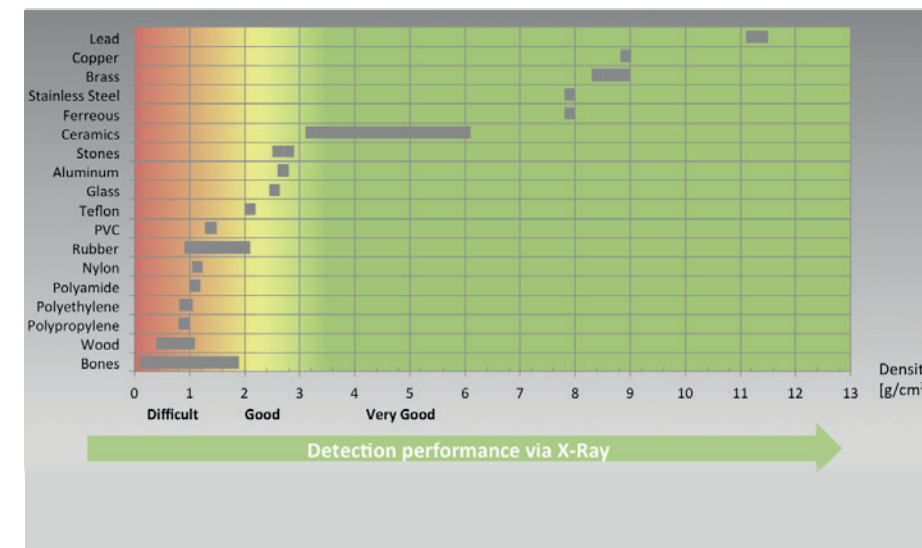


All RAYCON devices are **UL/CSA** certified and approved for use in the USA and Canada.



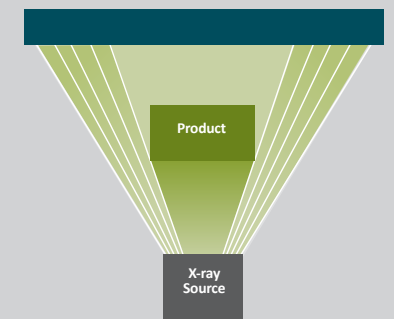
Sesotec Compliance Package: Software for complete and efficient documentation

- **Audit-Check:** Runs through audit routines and documents all steps (quality monitoring).
- **Sensitivity Prediction:** Enables the automatic configuration of detection sensitivity for steel and glass.
- **Compliance Mode:** The necessary detection accuracy can be configured manually. This ensures consistency and process stability.
- **Compliance Monitoring:** Ensures that current sensitivity levels are checked at pre-determined time intervals.
- **Integrated Validation Process:** The device includes an integrated multi-step process for the simplified verification of products.



No dead angles

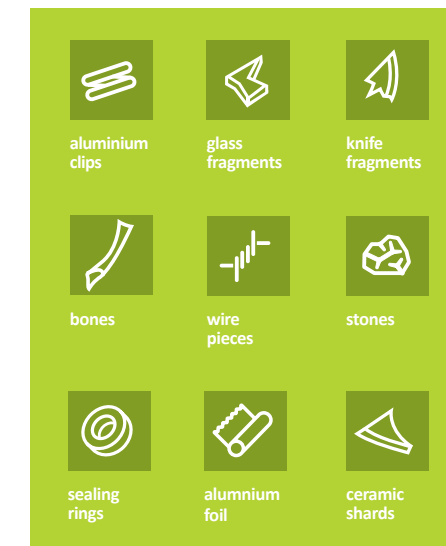
In RAYCON devices, the x-ray source is located beneath the conveyor belt. This eliminates dead angles in the inspection of tall products.



Detection accuracy

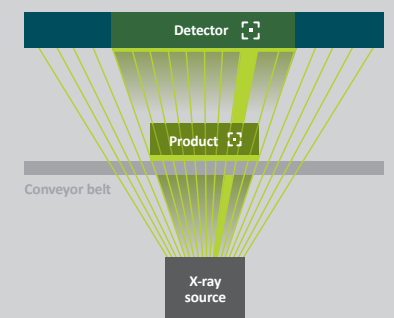
Reliable detection of various foreign bodies throughout the entire inspection area is a requirement for achieving conformity with all of the most common food safety standards and guidelines.

- **Reliable detection** of metallic and non-metallic foreign bodies
- **Detection accuracy** from 0,3 to 0,6 mm exceeds the IFS requirements for stainless steel (0.8 mm)



Flashlight effect

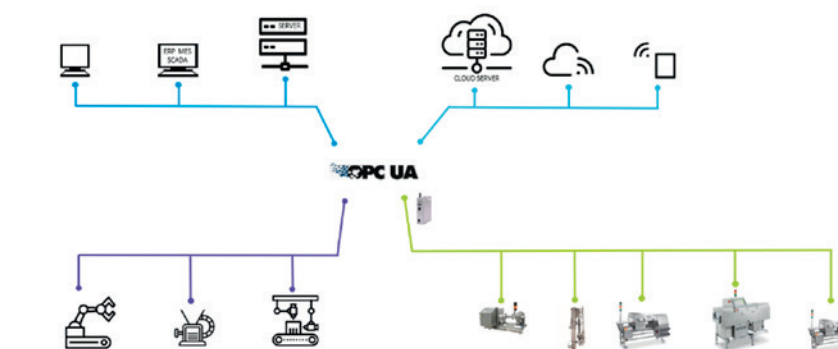
The large distance between the product and the detector makes it possible to detect foreign bodies that are smaller than the resolution of the detector.



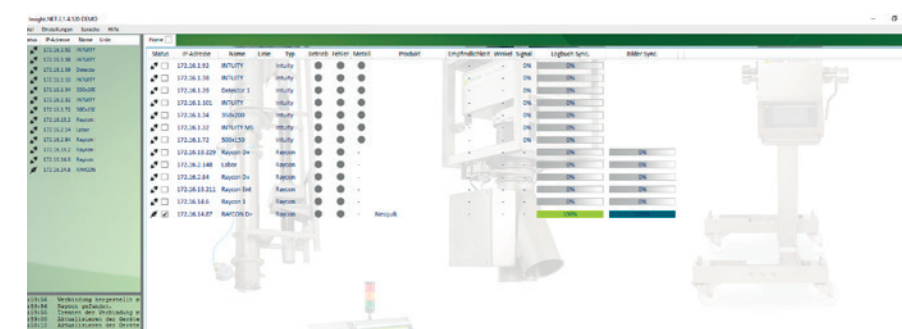
Safe and compliant: Data archiving with RAYCON

Achieve optimal product traceability with a seamless logbook and the option of image archiving

Insight.NET is software that enables the operation and monitoring of all x-ray devices from a centralized control panel. INTERLINK is a communication module for digitally connecting Sesotec devices to the central company network. This enables targeted productivity increases through centralized process analysis, monitoring, and control in keeping with Industry 4.0.



Sesotec INTERLINK - X-ray inspection 4.0



Insight.NET: Centralized data management for Sesotec x-ray inspection devices



Safety for people & products

The system ensures safety for your brand, your products, your employees, and your data

Radiation protection: a top priority for you and us

Our RAYCON systems help you avoid recalls due to foreign bodies, protecting your brand from image damage. Thanks to highly effective radiation protection and precision x-ray dosing, RAYCON devices are safe for both people and products.

- The legal threshold of 1 mSv/a is never surpassed and radiation levels remain significantly beneath this threshold.
- At the operation panel, for instance, the radiation level is a mere 0.1 $\mu\text{Sv/h}$ (measured from the operation side in front of the device).
- The radiation exposure for products is 100 times lower than the thresholds defined in EU 1999/2/EG.
- Compatible with organic products



Guaranteed data safety

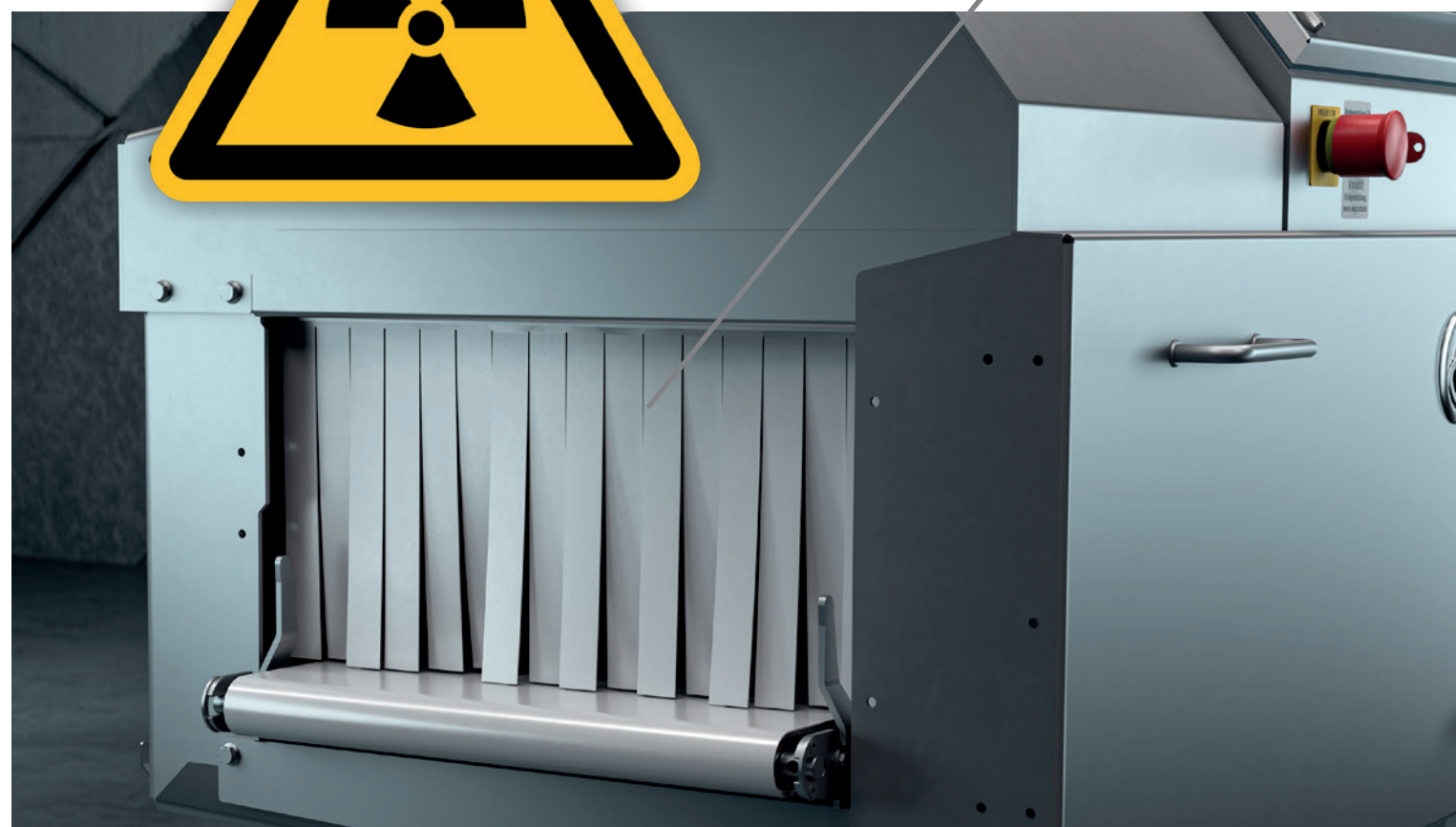
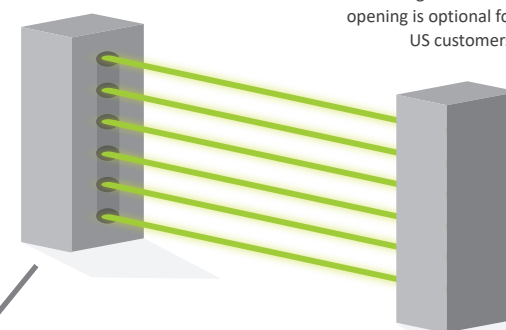
- Contactless user login via RFID chip ensures maximal access safety. An RFID transponder can both read data on the chip and save new data to it.
- Users can log in by holding their chip to the RFID reader, which is programmed to recognize each of the users assigned to each chip in user administration.
- Defining different user groups (e.g. Service, Admin, Operator) makes it possible to define access rights and provides an extra layer of protection.



Smart solutions for mechanical safety

Opening the cover automatically deactivates the x-ray beam and pneumatic system's air is de-energized, eliminating the air pressure in the pusher for extra safety.

An additional lightbox at the opening is optional for US customers.



Sesotec Service for RAYCON x-ray devices

Mechanical engineering with x-rays involves many requirements for radiation protection and employee safety. Ongoing service from Sesotec helps you to safely install and operate your x-ray device.

For new Sesotec devices

- Organizing training for on-site specialists (R3) and parties tasked with overseeing radiation protection
- Single-day on-site training by Sesotec
- Instruction for operating personnel by Sesotec
- Expert examination (Assessment for initial installation)
- Registration and permissions
- Recurring regular examinations (every 5 years)
- Notifying relevant authorities of changes

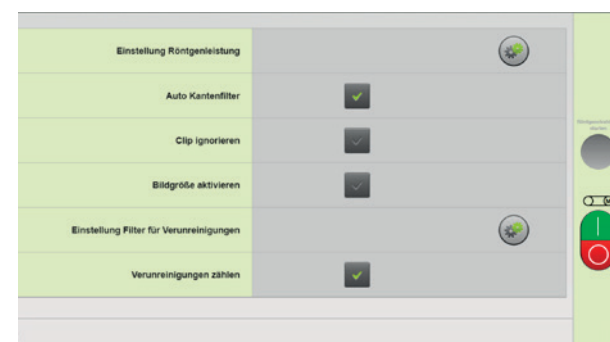
For existing Sesotec devices

- Refresher courses for on-site specialists (R3) tasked with overseeing radiation protection, Instruction for new operators
- Recurring regular examinations for installed devices (every 5 years)
- Notifying relevant authorities of changes

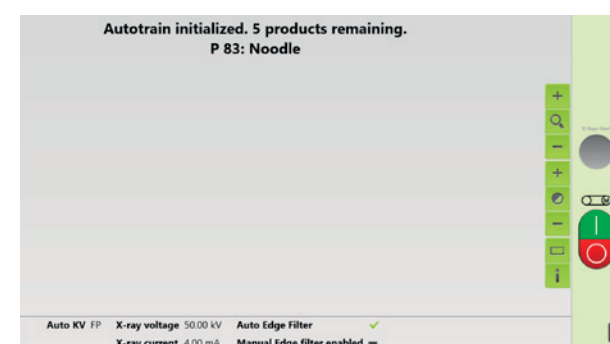


Simple operating concept

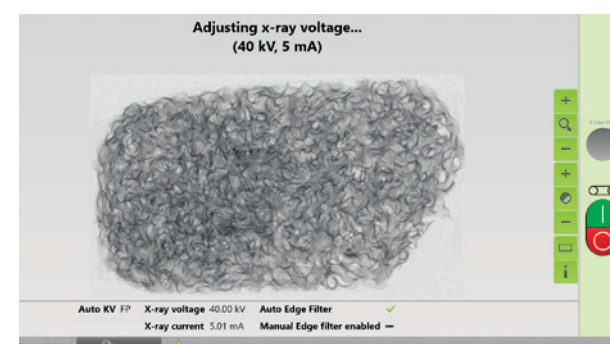
Intuitive user operation doesn't just feel good - it also improves processes and minimizes the risk of error



Auto-Learn menu



Menu-led, supported product learning



Automatic adjustment of the beam intensity depending on the product

Auto-learn function

Configuration and operation made easy:

- The Auto-Learn function offers simple and intuitive operation. Employees need not have specific skills or prior experience with image processing to operate the device.
- The configuration of diverse, specialized filters is performed by the device itself, relieving the user of this work.
- Using five product samples, auto-learning takes fewer than two minutes for each new product.

Smart support with our software

- **Increasing the detection sensitivity: "Clip Recognition"** is a feature that makes it possible to ignore the gray value of the metal clips used to package a product and proceed with the optimal detection sensitivity for the inside of the product. It's as simple as checking a box in the filter menu.
- **Automatic edge recognition:** The software automatically registers packaging features that could inhibit detection sensitivity and adjust the filter according to the contours of the product. Operators need no technical knowledge or prior experience to use this feature
- **Automatic configuration of the x-ray source:** RAYCON generates the optimal beam intensity to maximize detection accuracy using an automatic learning function.



Ignoring metal clips to increase detection sensitivity



Automatic edge recognition for packaging



Front-end functionality for all operation and servicing

Operation, emptying the rejection compartment, cleaning, band change, etc.

Touch screen

10"/15" color touchscreen with high resolution and a user-friendly layout

USB connection

For simplified data transfer

RFID login

Contactless data transfer via RFID login for maximal access protection



Hygienic design concept

The system is built according to hygienic design principles and offers easy cleaning and maintenance

10%

of your yearly revenue goes to cleaning

Did you know? Cleaning is among the most time- and resource-intensive aspects of food manufacturing and processing. One study revealed that half of food industry companies spend at least 10% of their yearly revenue on cleaning.

Highest hygiene standards for food production

Constructed with stainless steel and food-safe plastics, RAYCON is ideal for use in food contact applications (EG1935/2004).

- Tilted surfaces discourage the build-up of liquids and condensation
- Built entirely from stainless steel and food contact approved plastics (EG1935/2004)
- Gaps, crevices, and other **dead spaces are sealed off** to prevent the accumulation of residue
- Reduction of components that can loosen over time, presenting a contamination risk
- Use of materials that can withstand repeated, intensive cleaning without wear
- RAYCON D+ HX LW Hygienic for particularly high hygiene requirements, for example in the meat sector or for unpackaged, raw products



Mechanical advantages

- Simplified cleaning due to open, modular design
- Toolless access and disassembly of the conveyance area for cleaning and maintenance
- Suspension system for radiation protection curtains during cleaning help to reduce risk of recontamination
- Toolless belt replacement and toolless removal of radiation protection curtains in less than 2 minutes



Efficiency in all areas

Increasing output, avoiding food waste

Sophisticated technology for maximum productivity

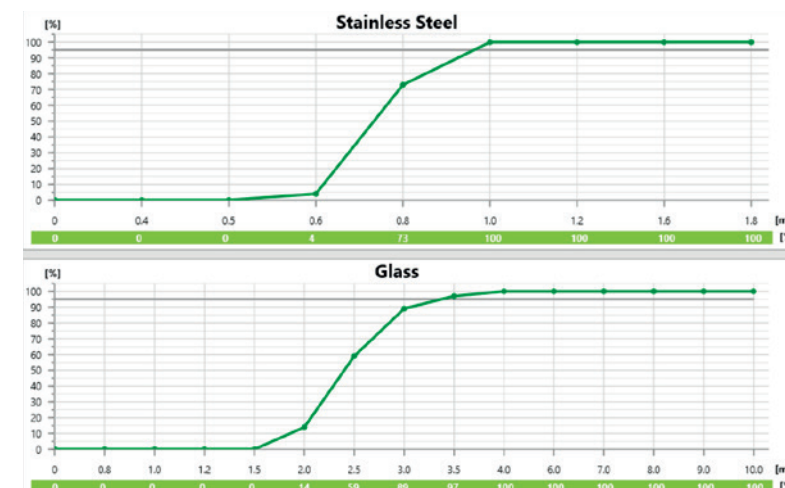
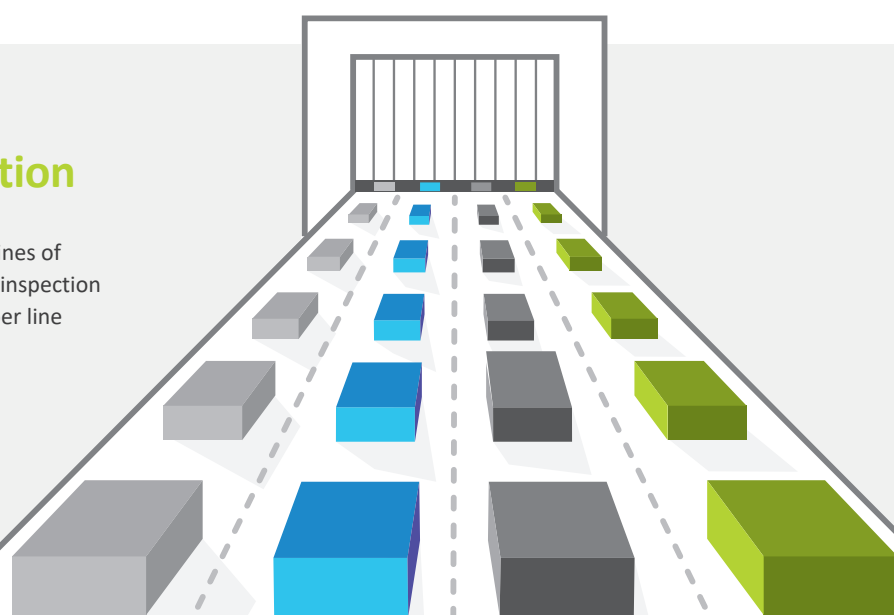
- High detection accuracy **minimizes false rejects**, thereby wasting less food (sustainability)
- **Expertly engineered and long-lasting core components** with up to 200W x-ray source and detection accuracy from 0.3 mm of stainless steel
- **Automatic notification** x-ray source is approaching end-of-life (early warning system for planning source replacement service)
- **Toolless beld and curtain** change in just a few minutes

Added value that you can see

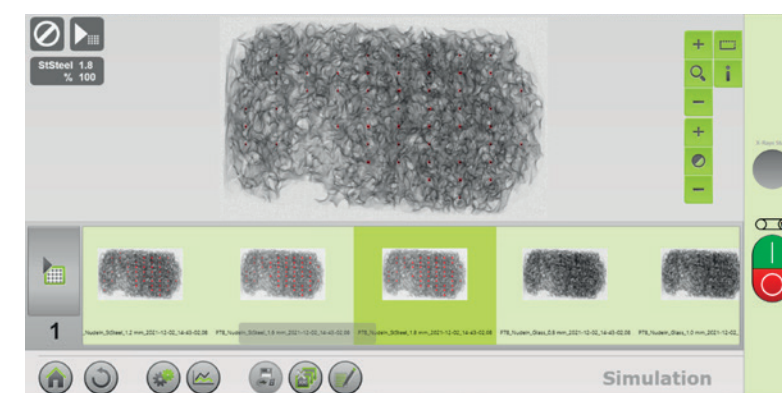
- **Reliable detection of product defects:** The software recognizes broken and misshapen products from within their packaging.
- **Weight checking products and components:** The software calculates the weight of the product based on dimensions and density, thereby recognizing weight differences among individual products in a line.
- **Completion control:** For each object marked for counting in the x-ray image, minimum amounts can be configured. Example: Counting chocolates

Multi-lane inspection

Simultaneously inspect up to four lines of identical products on a single x-ray inspection device. The products to be tested per line must always be the same.



Graphic depiction of the calculated detection sensitivities for stainless steel and glass



Simulation of test pieces for determining sensitivity

Sensitivity prediction and Sesotec Compliance Monitoring

The software package “Sensitivity Prediction” makes it possible to automatically determine the best detection sensitivity for stainless steel and glass. Data about hundreds of test pieces for glass and stainless steel are stored in the software. This information is calculated along with the product’s gray value image as if a product with a test piece were being recorded.

All information about detection sensitivity is calculated based on these images and displayed in a graph. The sensitivity calculations can be started manually from the menu or automatically performed directly following the learning function.

Integrated Compliance Monitoring ensures that specified sensitivities are continuously checked at predefined time intervals. Through regular controls of the detection requirements, deviations are immediately detected, increasing the consistency of the production process.

Up to
1500
products/minute

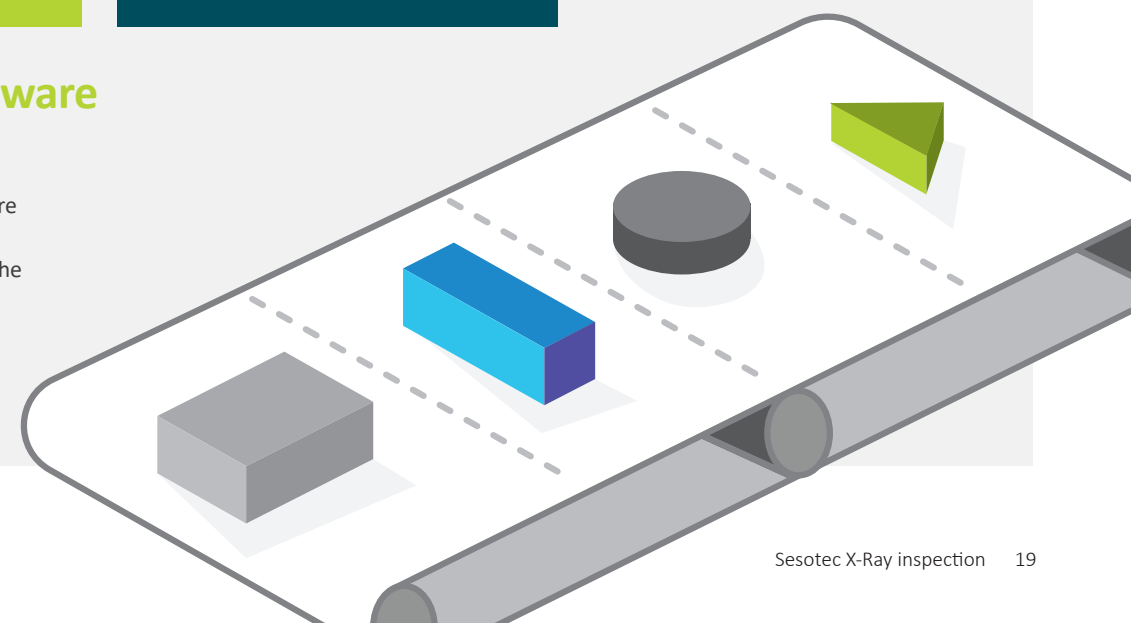
thanks to real-time controls
(product & machine dependent)

1.4
meter/second

Suitable for high belt speeds
(product & machine dependent)

Multi-product software

As many as 20 different products can be conveyed in any order. The software recognizes each product as it passes through the x-ray beam, and selects the appropriate parameters within milliseconds.





Reliable & fast service

Ensure continued performance and improvements, quick assistance in case of unplanned downtime, and problem prevention.

- **Customer-specific trainings** for proper operation, radiation protection, and service and maintenance
- **Yearly maintenance** and product validation
- **Initial installation on-site** by a qualified service technician
- Demo-devices delivered **on short notice**

The Sesotec communication style: Service. Global. Competent. Responsive.

In addition to first-class technologies for foreign body detection, Sesotec also offers first-class service. Broad knowledge and skills ensure that our service team can assist you no matter what the issue. With our Service, Sesotec can offer you investment and planning security.



Phone support

Many questions and issues can be resolved with a phone call. Our free telephone support is open on weekdays from 6AM to 8PM, and on weekends from 8AM to 5PM. Quick, simple, effective.



Remote access

Many errors can be resolved via remote access. Sesotec service technicians can use an ethernet connection to directly access your machine and perform troubleshooting, optimizations, and parameter configurations.



Remote support with Augmented Reality

In addition to phone support and remote servicing, Sesotec also offers video support using Augmented Reality. For this, we use the TeamViewer Pilot app.



Sesotec replacement and consumables packages

With a preventative package of replacement and consumable parts, your system is on the guard in case of unplanned downtime. These mechanical components can be quickly and easily changed.

Lifetime Warranty Package for increased OEE

(Overall Equipment Effectiveness)

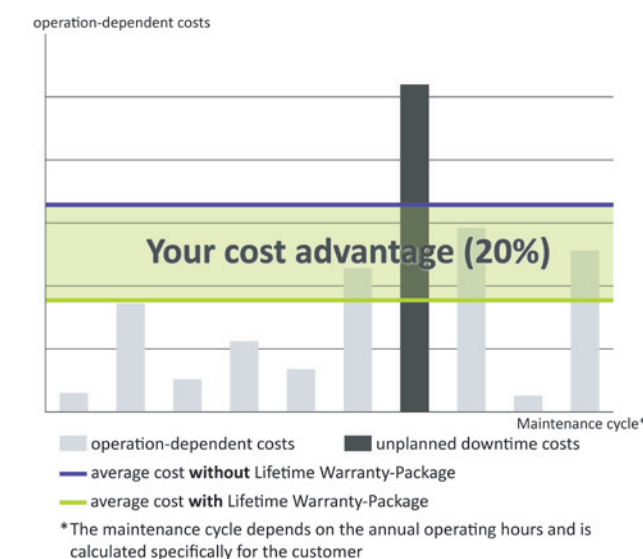
Life-long guarantee for x-ray tubes and detector

With the Lifetime Warranty Package

- Complete cost control over the lifetime of the device
- Predictive maintenance

Without Lifetime Warranty Package

- Costs and risks of unplanned downtime
- Unplanned downtime due to tube failure
- Uninspected products must be stored while the problem is resolved (storage costs)
- Costs and resources spent on subsequent investigation



365

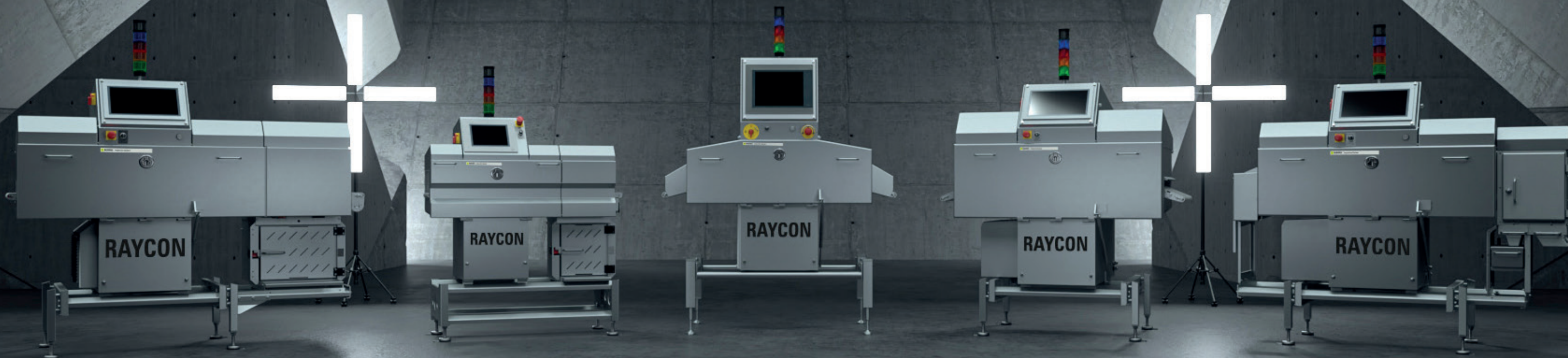
days

With global service centers, our support team is available year-round, offering quick response times.



PLEASED TO MEET YOU

The new RAYCON family



RAYCON EX1

An entry-level system for intelligent x-ray inspection of packaged products

0.8 mm

Detector

1000 pcs. / min

Performance*

60 Watt

X-ray Source

Compact and effective

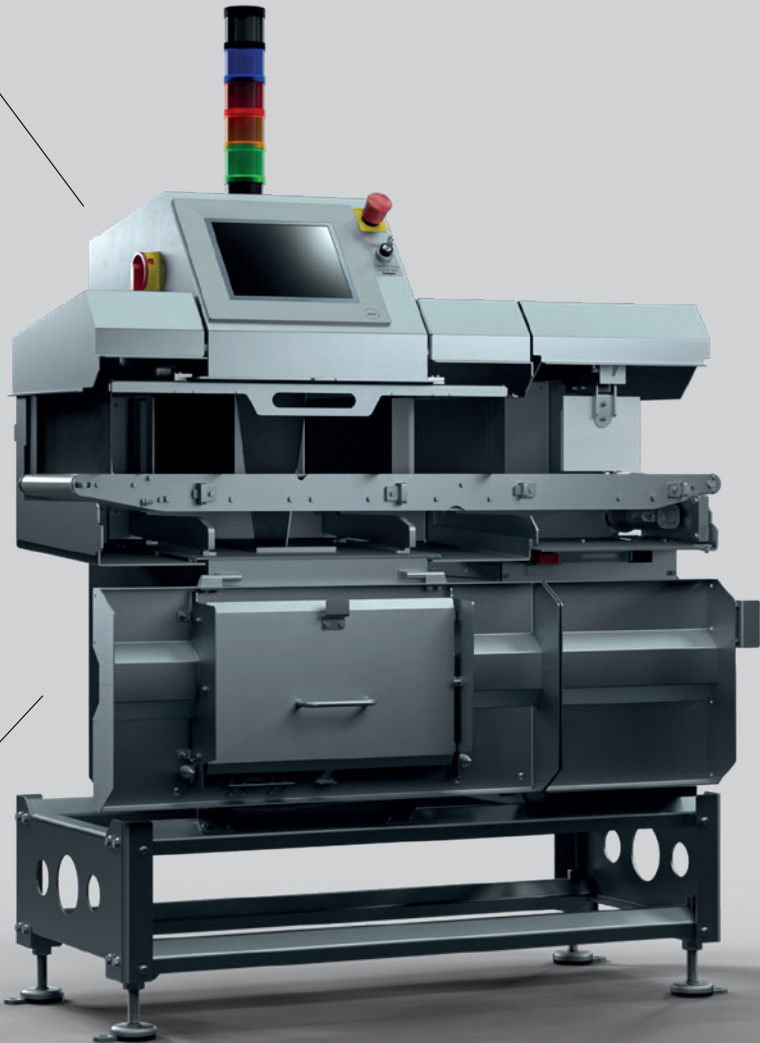
With a compact installation length, RAYCON EX1 fits into any production line. With an integrated exit signal, RAYCON EX1 has a total length of only 800 mm, or 1,200 mm with an integrated rejection unit.

Auto-learn function

With the Auto-Learn function, RAYCON EX1 offers a simple and intuitive operation. The configuration of various filters is performed by the device itself, considerably reducing effort on the part of the user. Using five product samples, auto-learning takes fewer than two minutes for each new product.

Detects product defects

The RAYCON EX1 reliably detects product defects such as missing, broken, or misshapen products.



*depending on product



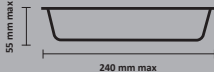
For packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	230 mm
X-ray source	40- 50 kV / 1.25- 1.5 mA (60W)
Detector definition	0.8 mm
Detection accuracy	from Ø 0.6 mm
Conveyance speed	up to 1.4 m/s
Throughput	up to 1000 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	240 x 55 mm 
Temperature environment	0 °C to 40 °C
Installation length	800 mm (signal only) 1,200 mm (integrated pusher)
Protection type	IP 65 in conveyance area IP 54 for entire device
Rejection system	Exit signal Integrated rejection system

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Compliance Package	Audit-Check in standard, IVP optional

Accessories

- Insight.NET**
Sesotec storage module for data archiving
- INTERLINK module**
For connecting to other networks
- Test pieces**
In various sizes and configurations

RAYCON D+ MX

The standard system for intelligent x-ray inspection of packaged products

0.8 mm

Optional 0.4 mm

Detector

1500 pcs. / min

Performance*

100 Watt

X-ray Source

Multi-lane

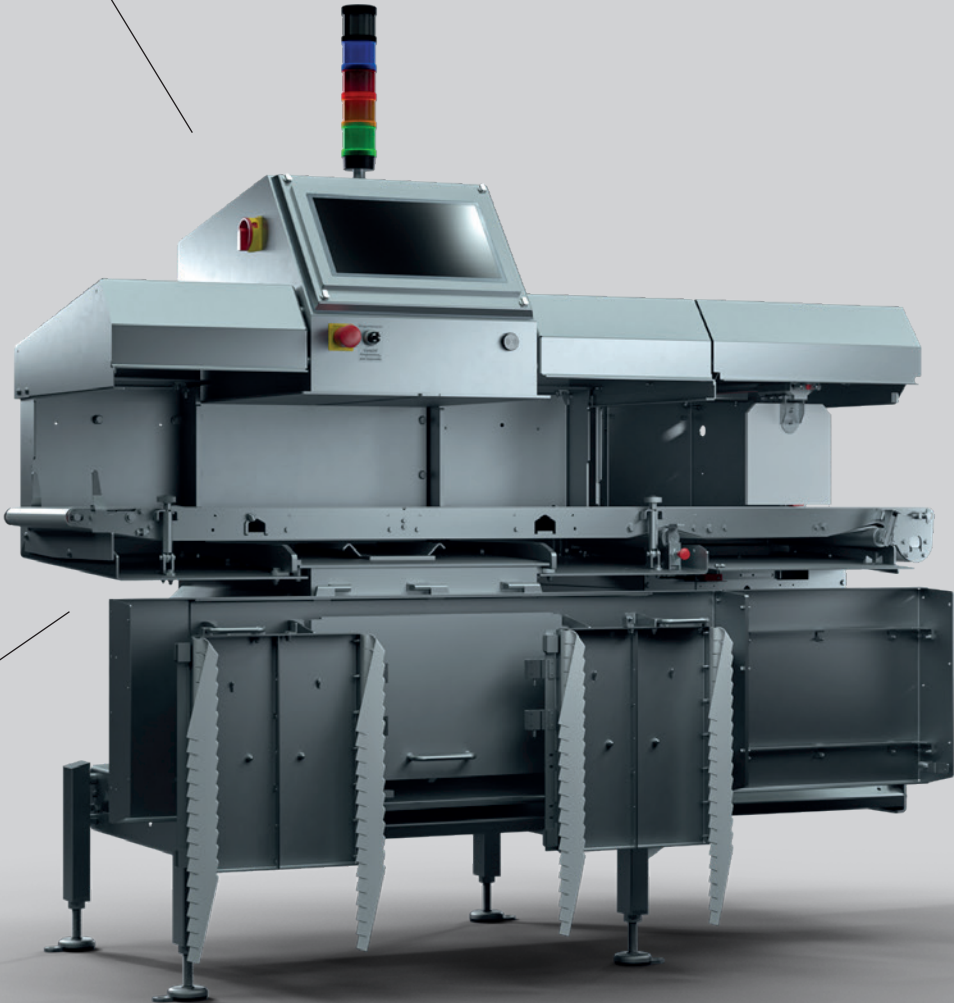
The RAYCON D+ MX can simultaneously inspect up to four lines of products, making it possible to inspect identical products from different production lines on a single device.

Zone Analyzer

The Zone Analyzer software allows for the definition of different zones within an x-ray image. This makes it possible to carry out counting and weighing for individual zones using optimal sensitivity settings for each.

Multi-product

As many as 20 different products can be conveyed in any order. The software recognizes each product as it passes through the x-ray beam and selects the appropriate parameters within milliseconds.



*depending on product



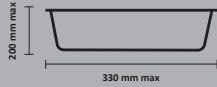
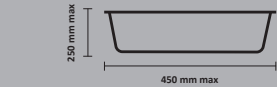

For packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 50 kV / 2.0- 2.5 mA (100W)	40- 50 kV / 2.0- 2.5 mA (100W)
Detector definition	0.8 mm (Optional 0.4 mm)	0.8 mm (Optional 0.4 mm)
Detection accuracy	from Ø 0.6 mm (Optional from Ø 0.3 mm)	from Ø 0.6 mm (Optional from Ø 0.3 mm)
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 200 mm 	450 x 250 mm 600 x 120 mm  
Temperature environment	0 °C to 30 °C (option of cooling device for temperatures up to 40 °C)	0 °C to 30 °C (option of cooling device for temperatures up to 35 °C)
Installation length	1,400 mm (signal only) 1,900 mm (integrated pusher)	1,400 mm (signal only)
Protection type	IP 65 for belt area IP 54 for entire device (IP 55 with optional cooling device)	IP 66 for belt area IP 54 for entire device (IP55 with optional cooling device)
Rejection system	Exit signal Integrated rejection system Separate rejection system	Exit signal Integrated rejection system Separate rejection system

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Compliance Package	Audit-Check in standard, IVP optional
Login Package	Expanded login functionality

Accessories

Insight.NET	Sesotec storage module for data archiving
INTERLINK module	For connecting to other networks
Test pieces	In various sizes and configurations

RAYCON D+ HX

The high-end system for intelligent x-ray inspection of packaged products

0.4 mm

Detector

900 pcs. / min

Performance*

200 Watt

X-ray Source

New software filters

Newly developed software filters improve the detection accuracy for specific, low-density contaminants. The Glass Increaser, for example, optimizes the detection of glass fragments, while the Bone Detector improves the detectability of fragments of bone and cartilage. In addition, the Wire Finder can reliably detect smaller, elongated pieces of wire.

Sensitivity prediction

Sensitivity prediction makes it possible to automatically configure the best detection sensitivity for stainless steel and glass. Data about hundreds of test pieces for glass and stainless steel are stored in the software. This information is calculated along with the product's gray value image, as if a product with a test piece were being recorded.

Self-monitoring

Integrated Compliance Monitoring ensures that specified sensitivities are continuously checked at predefined time intervals. Through regular controls of the detection requirements, deviations are immediately detected, increasing the consistency of the production process.

*depending on product



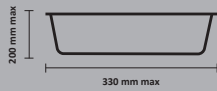
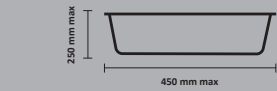
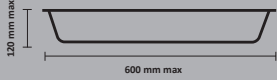
For packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 100 kV / 2.0- 5.0 mA (200W)	40- 100 kV / 2.0- 5.0 mA (200W)
Detector definition	0.4 mm	0.4 mm
Detection accuracy	from Ø 0.3 mm	from Ø 0.3 mm
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 900 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm	up to 900 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 200 mm 	450 x 250 mm 600 x 120 mm  
Temperature environment	0 °C to 40 °C	0 °C to 35 °C
Installation length	1,400 mm (signal only) 1,900 mm (integrated pusher)	1,400 mm (signal only)
Protection type	IP 66 for belt area IP 55 for entire device	IP 66 for belt area IP 55 for entire device
Rejection system	Exit signal Integrated rejection system Separate rejection system	Exit signal Separate rejection system

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Software Package 3	Sensitivity prediction and Compliance Mode
Compliance Package	Audit-Check, Compliance Mode and Sensitivity Prediction in standard, ICM and IVP optional
Login Package	Expanded login functionality

Accessories

- Insight.NET**
Sesotec storage module for data archiving
- INTERLINK module**
For connecting to other networks
- Test pieces**
In various sizes and configurations

RAYCON D+ MX LW

The standard system for intelligent, curtainless x-ray inspection of lightweight or sharp-edged packaged products.

0.8
mm
Optional 0.4 mm

1500
pcs. / min

100
Watt

Detector

Performance*

X-ray Source

Curtainless machine

Designed free of curtains, the RAYCON D+ MX LW is perfect for inspecting lightweight products.

Multi-lane

The RAYCON D+ MX can simultaneously inspect up to four lines of products, making it possible to inspect identical products from different production lines on a single device.

Detects product defects

The RAYCON D+ MX LW reliably detects product defects such as missing, broken, or misshapen products.



*depending on product



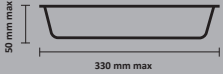
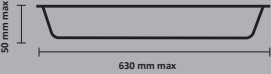
For lightweight or sharp-edged packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 50 kV / 2.0- 2.5 mA (100W)	40- 50 kV / 2.0- 2.5 mA (100W)
Detector definition	0.8 mm (Optional 0.4 mm)	0.8 mm (Optional 0.4 mm)
Detection accuracy	from Ø 0.6 mm (Optional from Ø 0.3 mm)	from Ø 0.6 mm (Optional from Ø 0.3 mm)
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 50 mm 	630 x 50 mm 
Temperature environment	0 °C to 40 °C (option of cooling device for temperatures up to 40 °C)	0 °C to 35 °C (option of cooling device for temperatures up to 35 °C)
Installation length	1,500 mm (signal only) 1,750 mm (integrated pusher)	1,500 mm (signal only) 1,750 mm (integrated pusher)
Protection type	IP 66 for belt area IP 55 for entire device (IP 55 with optional cooling device)	IP 66 for belt area IP 55 for entire device (IP 55 with optional cooling device)
Rejection system	Exit signal Integrated rejection system with 1 or 2 flaps Separate rejection system	Exit signal Integrated rejection system with 1 or 2 flaps Separate rejection system

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Compliance Package	Audit-Check in standard, IVP optional
Login Package	Expanded login functionality

Accessories

Insight.NET	Sesotec storage module for data archiving
INTERLINK module	For connecting to other networks
Test pieces	In various sizes and configurations

RAYCON D+ HX LW

The high-end system for intelligent, curtainless x-ray inspection of lightweight or sharp-edged packaged products

0.4 mm

Detector

900 pcs. / min

Performance*

200 Watt

X-ray Source

New software filters

Newly developed software filters improve the detection accuracy for specific, low-density contaminants. The Glass Increaser, for example, optimizes the detection of glass fragments, while the Bone Detector improves the detectability of fragments of bone and cartilage. In addition, the Wire Finder can reliably detect smaller, elongated pieces of wire.

Sensitivity prediction

Sensitivity prediction makes it possible to automatically configure the best detection sensitivity for stainless steel and glass. Data about hundreds of test pieces for glass and stainless steel are stored in the software. This information is calculated along with the product's gray value image as if a product with a test piece were being recorded.

Self-monitoring

Integrated Compliance Monitoring ensures that specified sensitivities are continuously checked at predefined time intervals. Through regular controls of the detection requirements, deviations are immediately detected, increasing the consistency of the production process.



*depending on product



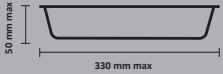
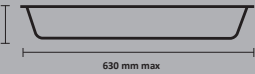
For lightweight or sharp-edged packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 60 kV / 3.3- 5.0 mA (200W)	40- 60 kV / 3.3- 5.0 mA (200W)
Detector definition	0.4 mm	0.4 mm
Detection accuracy	from Ø 0.3 mm	from Ø 0.3 mm
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 900 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm	up to 900 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 50 mm 	630 x 50 mm 
Temperature environment	0 °C to 40 °C	0 °C to 35 °C
Installation length	1,500 mm (signal only) 1,750 mm (integrated pusher)	1,500 mm (signal only) 1,750 mm (integrated pusher)
Protection type	IP 66 for belt area IP 55 for entire device	IP 66 for belt area IP 55 for entire device
Rejection system	Exit signal Integrated rejection system with 1 or 2 flaps	Exit signal Integrated rejection system with 1 or 2 flaps

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Software Package 3	Sensitivity prediction and Compliance Mode
Compliance Package	Audit-Check, Compliance Mode and Sensitivity Prediction in standard, ICM and IVP optional
Login Package	Expanded login functionality

Accessories

Insight.NET	Sesotec storage module for data archiving
INTERLINK module	For connecting to other networks
Test pieces	In various sizes and configurations

RAYCON D+ MX Bulk

The standard system for intelligent x-ray inspection of unpackaged products

0.8 mm

Detector

13.5 t/h

Performance

100 Watt

X-ray Source

Real-time operating system

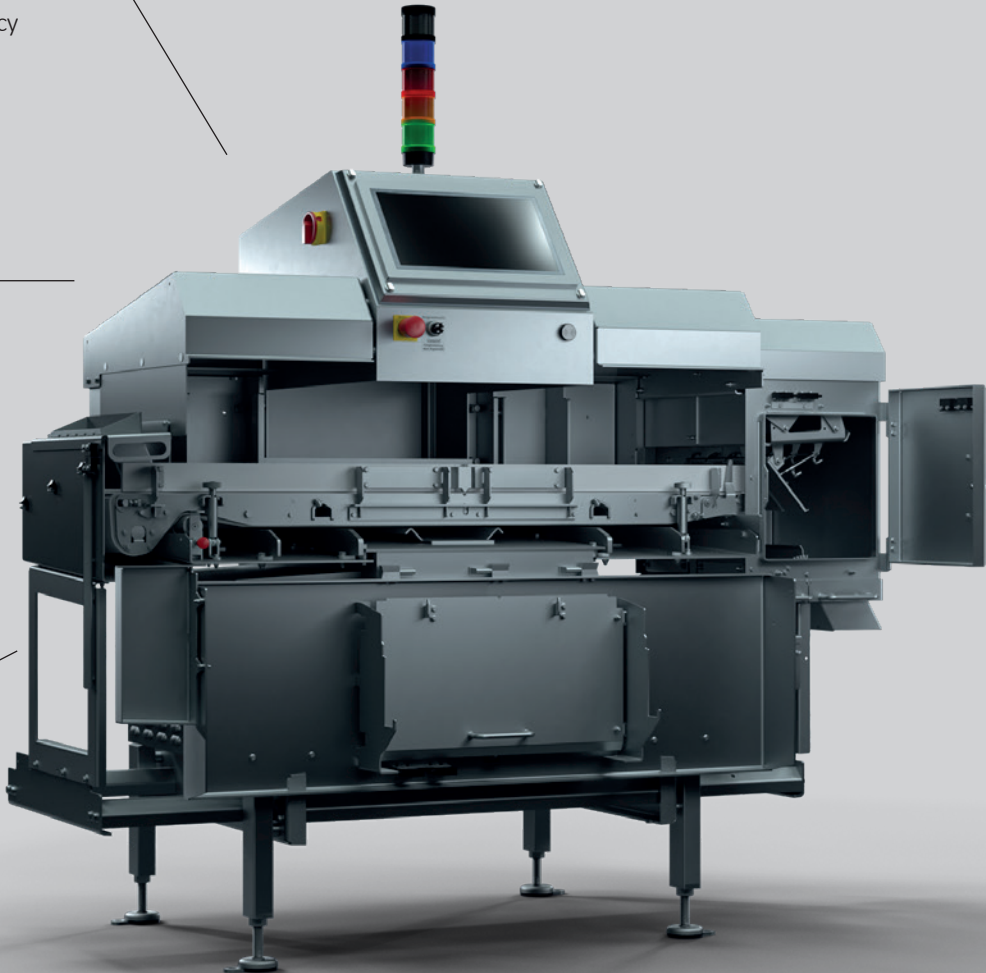
Fastest image data processing and an exact rejection rate; very high detection accuracy from 0.6 mm.

Highest flexibility

As standard, the device is equipped with a rejection system integrated with four separate, pneumatically powered flaps. To ensure minimal loss of good material, the rejection system can be expanded to include as many as 20 flaps or segmented blowing nozzles.

Uniform product distribution

The RAYCON D+ MX Bulk includes an integrated feed hopper and an optional vibrating chute to ensure products are distributed evenly along the entire width of the conveyor band.



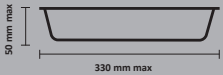

For unpackaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 50 kV / 2.0- 2.5 mA (100W)	40- 50 kV / 2.0- 2.5 mA (100W)
Detector definition	0.8 mm	0.8 mm
Detection accuracy	from Ø 0.6 mm	from Ø 0.6 mm
Conveyance speed	up to 1.3 m/s	up to 1.3 m/s
Throughput	up to 7 t/h	up to 13.5 t/h
Max. inspection area (W x H)	330 x 50 mm 	630 x 50 mm 
Temperature environment	0 °C to 30 °C (option of cooling device for temperatures up to 40 °C)	0 °C to 30 °C (option of cooling device for temperatures up to 35 °C)
Installation length	1,800 mm (integrated flap)	1,800 mm (integrated flap)
Protection type	IP 66 for belt area IP 54 for entire device (IP55 with optional cooling device)	IP 66 for belt area IP 54 for entire device (IP55 with optional cooling device)
Rejection system	Integrated rejection system with 4 flaps (option of up to 10 flaps)	Integrated rejection system with 4 flaps (option of up to 20 flaps)

Software options

Compliance Package	Audit-Check in standard
Login Package	Expanded login functionality

Accessories

Insight.NET Sesotec storage module for data archiving
INTERLINK Modul For connecting to other networks
Test pieces In various sizes and configurations

RAYCON D+ HX Bulk

The high-end system for intelligent x-ray inspection of unpackaged products

0.4
mm

Detector

13.5
t / h

Performance

200
Watt

X-ray Source

Real-time operating system

Fastest image data processing and an exact rejection rate; very high detection accuracy from 0.3 mm.

High throughput

The RAYCON D+ HX Bulk can detect up to detect up to 13.5 tons per hour at a fill level of 20 mm.

Hygiene concept

With an optional extraction device, the RAYCON D+ HX Bulk succeeds in preventing the accumulation of dust in the area surrounding the product sorting system.



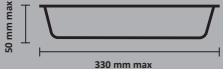
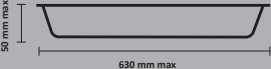
For unpackaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40- 60 kV / 3.3- 5.0 mA (200W)	40- 60 kV / 3.3- 5.0 mA (200W)
Detector definition	0.4 mm	0.4 mm
Detection accuracy	from Ø 0.3 mm	from Ø 0.3 mm
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 900 pcs./min. at Ø 66 x H 33 mm 300 pcs./min. at L220 x B170 x H20	up to 900 pcs./min. at Ø 66 x H 33 mm 300 pcs./min. at L220 x B170 x H20
Max. inspection area (W x H)	330 x 50 mm 	630 x 50 mm 
Temperature environment	2 °C to 12 °C	2 °C to 12 °C
Installation length	1,800 mm (integrated flap)	1,800 mm (integrated flap)
Protection type	IP 66 for belt area IP 55 for entire device	IP 66 for belt area IP 55 for entire device
Rejection system	Integrated rejection system with 4 flaps (option of up to 10 flaps)	Integrated rejection system with 4 flaps (option of up to 20 flaps)

Software options

Compliance Package	Audit-Check in standard
Login Package	Expanded login functionality

Accessories

- Insight.NET**
Sesotec storage module for data archiving
- INTERLINK Modul**
For connecting to other networks
- Test pieces**
In various sizes and configurations

RAYCON D+ HX Dual Energy

The high-end system for intelligent x-ray inspection of packaged products

0.8 mm

Detector

1500 pcs. / min

Performance*

200 Watt

X-ray Source

Dual Energy functional principle

Two nearly parallel lines in the Dual Energy detector, one low-energy and one high-energy, yield two related images.

Dual Energy advantage

The dual detector can identify the type of material for each product. This helps to better distinguish contaminants from the product itself.

Auto-learn function

The Auto-learn function offers a simple and intuitive operation. The configuration of various filters is performed by the device itself, considerably reducing effort on the part of the user. Using five product samples, auto-learning takes fewer than two minutes for each new product.



*depending on product



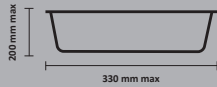
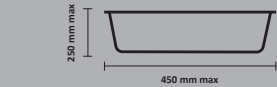

For packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40-60 kV / 2.0 mA (200W)	100 kV / 2.0 mA (200W)
Detector definition	0.8 mm	0.8 mm
Detection accuracy	from Ø 0.6 mm	from Ø 0.6 mm
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm	up to 1500 pcs./min. at Ø66 x H 33 mm 220 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 200 mm 	450 x 250 mm 600 x 120 mm  
Temperature environment	0 °C to 40 °C	0 °C to 35 °C
Installation length	1,400 mm (signal only) 1,900 mm (integrated pusher)	1,400 mm (signal only)
Protection type	IP 66 for belt area IP 55 for entire device	IP 66 for belt area IP 55 for entire device
Rejection system	Exit signal Integrated rejection system Separate rejection system	Exit signal Integrated rejection system Separate rejection system

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Compliance Package	Audit-Check in standard, IVP optional
Login Package	Expanded login functionality

Accessories

Insight.NET Sesotec storage module for data archiving
INTERLINK Modul For connecting to other networks
Test pieces In various sizes and configurations

RAYCON D+ HX LW Hygienic

The high-end system for intelligent x-ray inspection of packaged products

0.8 mm

Detector

1500 pcs. / min

Performance*

200 Watt

X-ray Source

New software filters

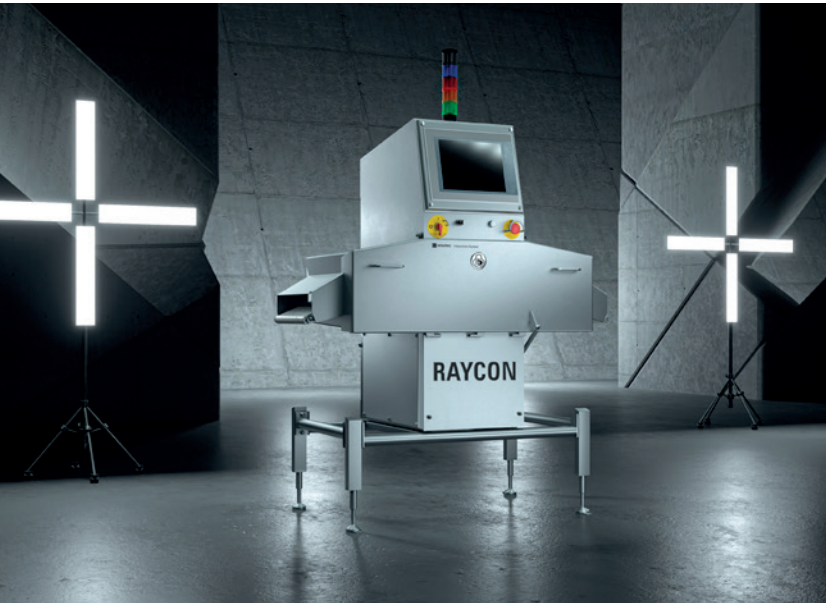
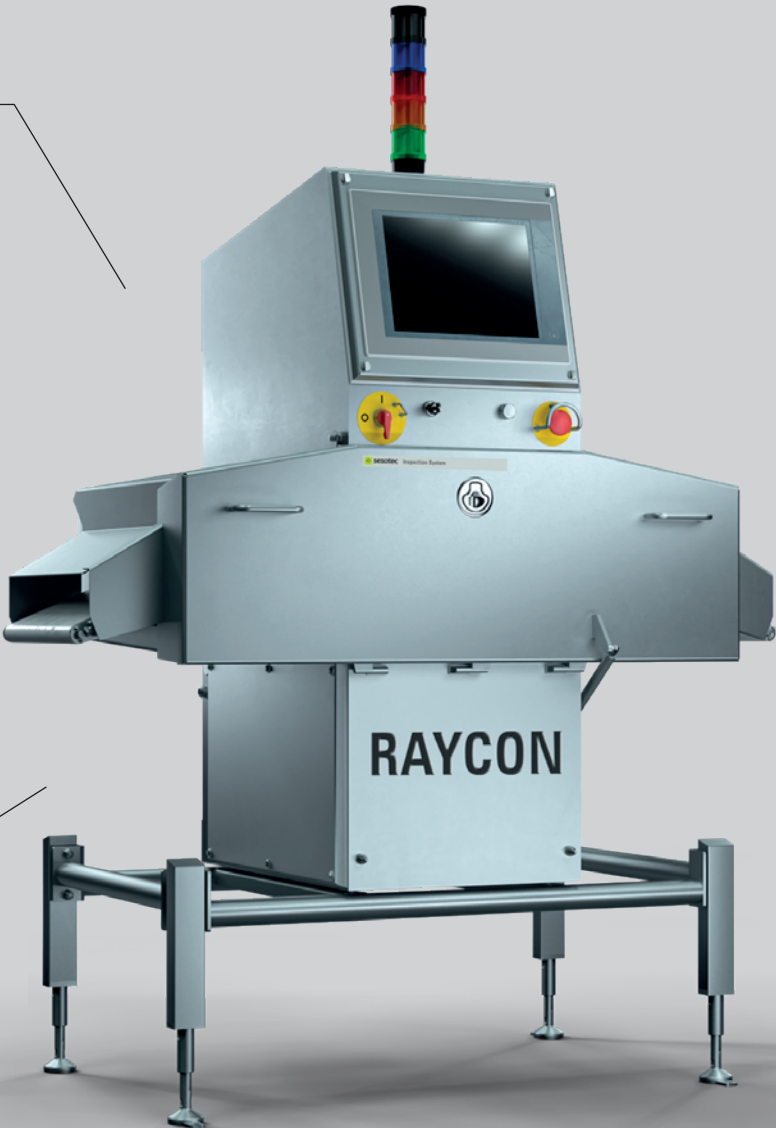
The newly developed software filters improve the detection accuracy of foreign bodies with lower density. The Glassincreaser, for example, optimizes the detection of glass fragments, while the Bonedetector improves the detection of bone and cartilage. In addition, the Wirefinder can reliably detect smaller elongated wire forms.

Self-monitoring

„Integrated Compliance Monitoring“ ensures that the specified sensitivities are continuously checked at predefined time intervals. This control of detection requirements leads to immediate detection of deviations and increases the stability of the production process.

Hygienic Design

The RAYCON is curtainless, has extremely stable rollers, ground surfaces (< Ra 0.8 µm) and also **passive cooling** instead of a filter fan or air conditioning unit. All components (monitor, key switch, signal lamp, drum motor, etc.) of the RAYCON D+ HX LW Hygienic are designed for the **high protection class IP69**. The safety symbols, as well as the nameplate, are stained onto the device as pictograms, thus replacing the stickers that do not correspond to the high degree of protection.



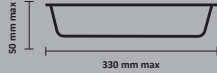
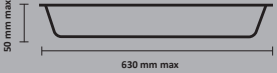
For packaged products

Free consultation

<https://www.sesotec.com/emea/en/contact-form>



Possible configurations

Belt width	360 mm	660 mm
X-ray source	40-60 kV / 3,3-5,0 mA (200W)	40-60 kV / 3,3-5,0 mA (200W)
Detector definition	0.4 mm	0.4 mm
Detection accuracy	from Ø 0.3 mm	from Ø 0.3 mm
Conveyance speed	up to 1.4 m/s	up to 1.4 m/s
Throughput	up to 900 pcs./min. at Ø66 x H 33 mm 300 pcs./min. at L 220 x W 170 x H 20 mm	up to 900 pcs./min. at Ø66 x H 33 mm 300 pcs./min. at L 220 x W 170 x H 20 mm
Max. inspection area (W x H)	330 x 50 mm 	630 x 50 mm 
Temperature environment	2 °C to 12 °C (passive cooling)	2 °C to 12 °C (passive cooling)
Installation length	1,500 mm (signal only) 1,750 mm (integrated pusher)	1,500 mm (signal only) 1,750 mm (integrated pusher)
Protection type	IP 69	IP 69
Rejection system	Retract Belt, Integrated rejection system with 1 or 2 flaps	Retract Belt, Integrated rejection system with 1 or 2 flaps

Software options

Software Package 1 (Inclusive)	Completion control, weight check, form deviations, clip recognition
Software Package 2	Multi-lane, Multi-product, Zone analyzer
Software Package 3 (inclusive)	Sensitivity prediction and Compliance Mode
Compliance Package	Audit-Check, Compliance Mode, Sensitivity Prediction in standard, ICM and IVP optional
Login Package	Expanded login functionality

Accessories

Insight.NET Sesotec storage module for data archiving
INTERLINK Modul For connecting to other networks
Test pieces In various sizes and configurations

Additional options

RAYCON is flexible and can be adapted to fit your needs.

Software Package 1

included as standard

Completion control

For each object marked for counting in the x-ray image, minimum amounts can be configured. E.g. the number of chocolates in a box.

Misshapen products

The software recognizes broken and misshapen products from within their packaging.

Weight checking

The software calculates the weight of the product based on dimensions and density, thereby recognizing weight differences among individual products in a line.

Clip recognition

This feature makes it possible to ignore the gray value of the metal clips used to package a product and proceed with the optimal detection sensitivity for the inside of the product.

Software Package 2

Multi-lane

This software package allows for the simultaneous inspection of up to four lines of products, making it possible to inspect identical products from different product lines on a single device.

Multi-product

Allows for the conveyance of up to 20 different products in any order. The software recognizes each product as it passes through the x-ray beam and selects the appropriate parameters within milliseconds.

Zone Analyzer

Allows for the definition of different zones within an x-ray image. Counting and weighing parameters can be defined for each zone, ensuring the best sensitivity settings are used for each.

Software Package 3

included as standard

Sensitivity prediction

Makes it possible to automatically configure the best detection sensitivity for stainless steel and glass. Data about hundreds of test pieces for glass and stainless steel are stored in the software. This information is calculated along with the product's gray value image, as if a product with a test piece were being recorded.

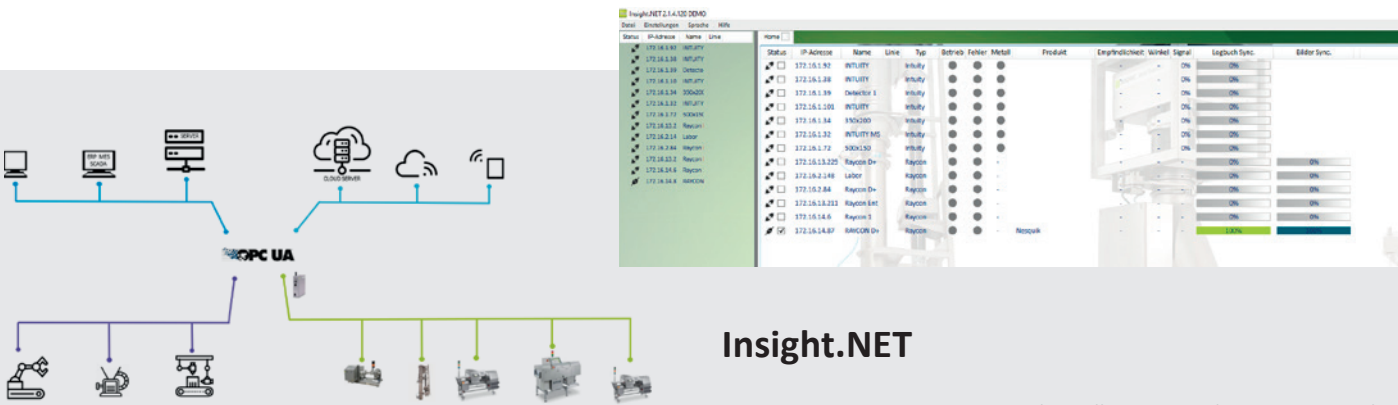
Compliance Mode

With the Compliance Mode, the detection sensitivity can be set to a factory/ or audit standard to produce compliantly and maintain constant process stability. The X-ray unit directly adjusts the software filters to the compliance mode values during the teach-in process in order to reliably detect the specified test samples.

Our intelligent technologies and services help food industry companies profitably manufacture safe products and reduce food waste.

Compliant.
Sustainable.
Efficient.

As a partner to the food industry, Sesotec provides a variety of solutions for each stage of the process, product type and support type, as well as for all critical control points in the production process.



INTERLINK Module / X-ray inspection 4.0

- Communication module for digitally connecting Sesotec devices to the central company network
- Networking via OPC-UA
- Targeted productivity increases through centralized process analysis, monitoring, and control
- Enables centralized control of Sesotec inspection devices, as well as remote and predictive maintenance
- Enables early detection of errors along with wear and tear by cross-device data

Insight.NET

- Our x-ray inspection system logs all operating data in a protocol, from detected foreign bodies to product changes, to audit checks, to error notices. Every data entry is timestamped and includes all relevant x-ray images.
- Insight.NET is a centralized data management software that makes it possible to monitor and service all x-ray devices and metal detectors from a single control panel, such as a smartphone or laptop. This allows you to access all system data (such as the logbook and x-ray images) to read, save, load, delete, or print as you need. You can also access and operate all systems remotely - anytime from wherever you are.

Want to learn more about our technology for food manufacturing?

Get in touch with us directly! We look forward to advising you.

You can reach us at:

+49 (0) 8554 308-0 **www.sesotec.com**

Imprint



Sesotec GmbH Regener Street 130 D-94513 Schönberg	Managing Director: Joachim Schulz	Concept, text, design: Effecticore Marketing GmbH, Munich
Telefon: +49 (0) 8554 / 308-0 Telefax: +49 (0) 8554 / 2606 Mail: info@sesotec.com Website: www.sesotec.com	Register court: Local court Passau Commercial register no. HRB 3163	Picture credits / Copyright: All image rights reserved by the company Sesotec GmbH.
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