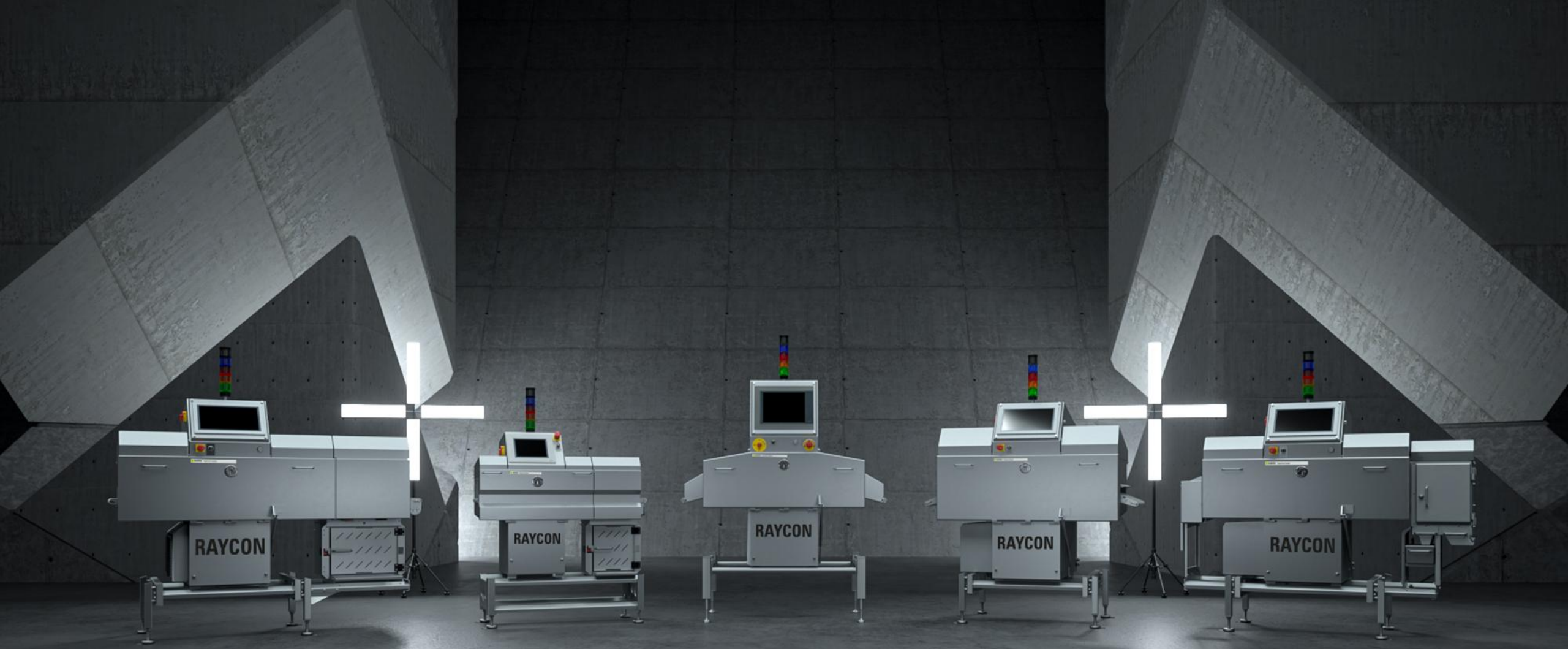
sesotec

RAYCON EX2

Next generation X-ray system

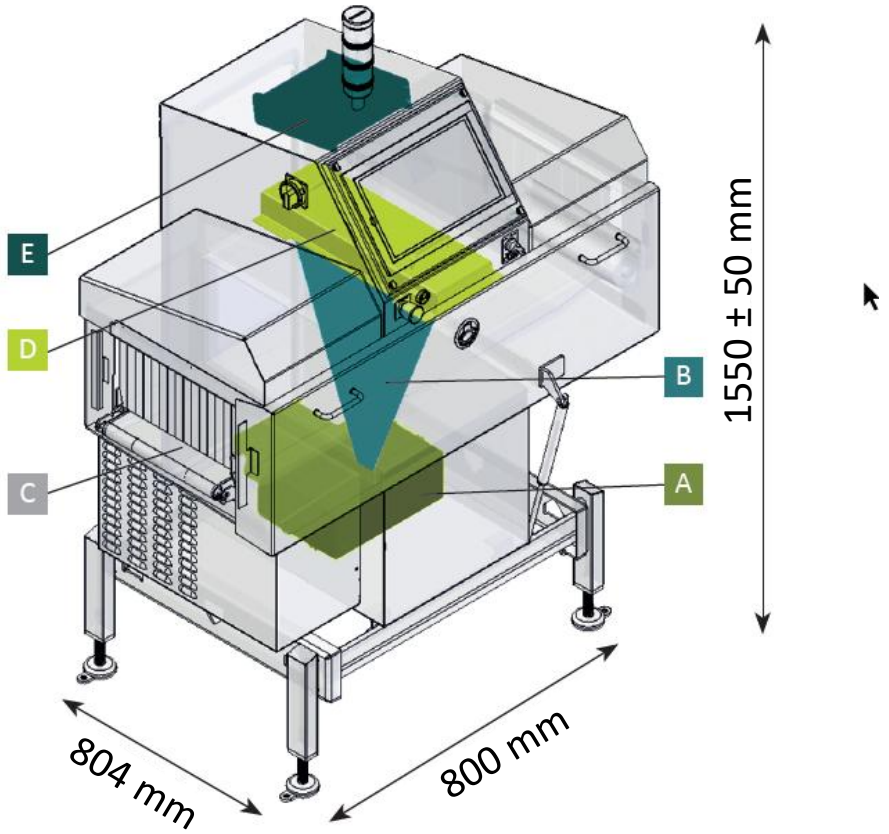


NEW GENERATION

RAYCON – on a new level

V2/PM: RAYCON EX2 - XRay-inspectionsystem

Functional diagram



The system consists of the following main components:

A X-ray tube: Here the X-rays are generated electrically. They exit the tube through a narrow slit and penetrate the products to be inspected/examined from the bottom to the top as a fan-shaped beam.

B X-ray beam

C Transport system: A PE flat belt (self-guiding) transports the product to be examined evenly through the X-ray beam. This makes it possible to scan the product line by line.

D Detector unit: The linear detector installed above the inspection aperture converts the incoming X-ray beams into an electrical signal from which a digital X-ray image is generated.

E Industrial PC: This is where image evaluation and precise control of the reject systems take place.

Detection performance

The detectability of foreign bodies in X-ray systems with single-energy technology depends primarily on the density of the foreign body.

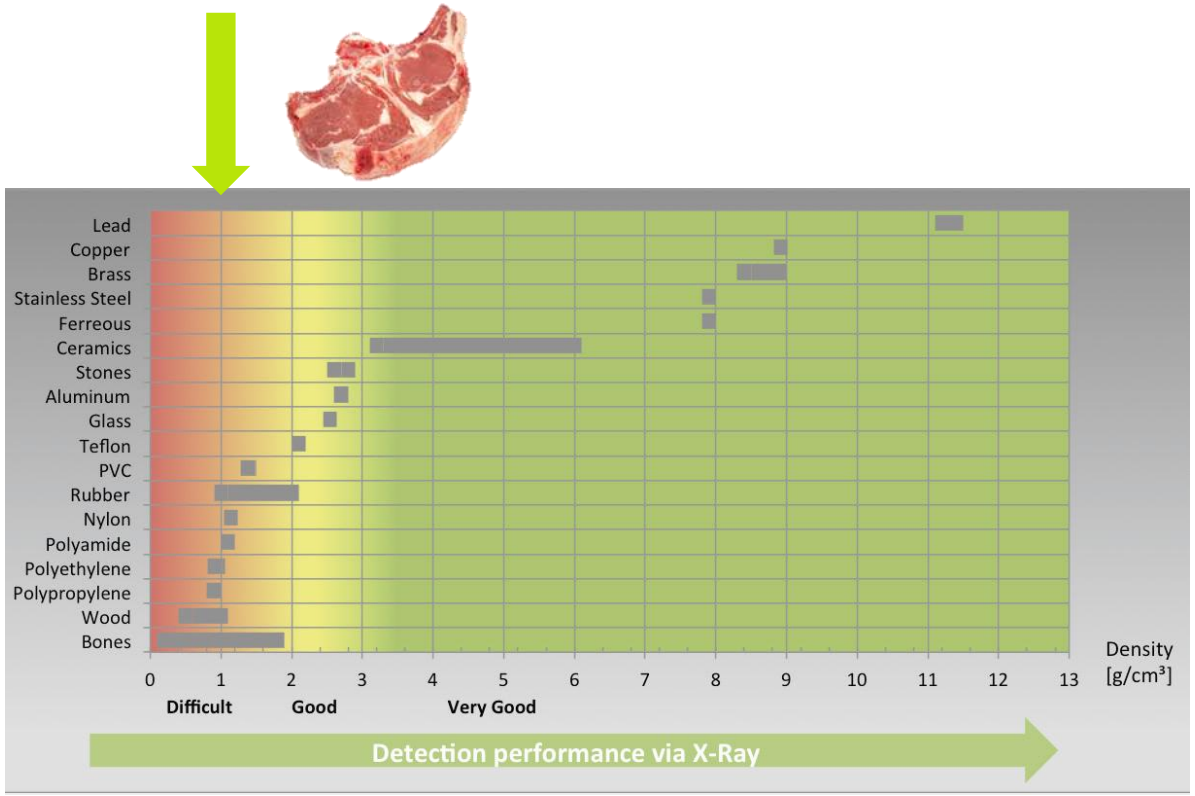
Material that floats on the water surface → barely detectable

Material that sinks to the bottom → good detectable

- Density of water: ~1,0 g/cm³
- This example bases on the fact that almost all food-products consist of about 90% water

➢ A free test with your product provides you with a meaningful basis for decision-making.

meat has a density of 0,95 - 1,1g/ cm³



- All foreign bodies with a density significantly higher than the product density are very well detectable. For example, metals, glass, stones, ceramics in products such as sausage, cheese, meat, etc.
- However, thanks to the high-resolution detector and the sophisticated software evaluation using a large number of filters in the RAYCON D+, bones, rubber, Teflon, PVC, etc. can also be reliably detected.

SESOTEC 6P CONCEPT

Your priorities. Our answers.

The 6P Concept at a glance

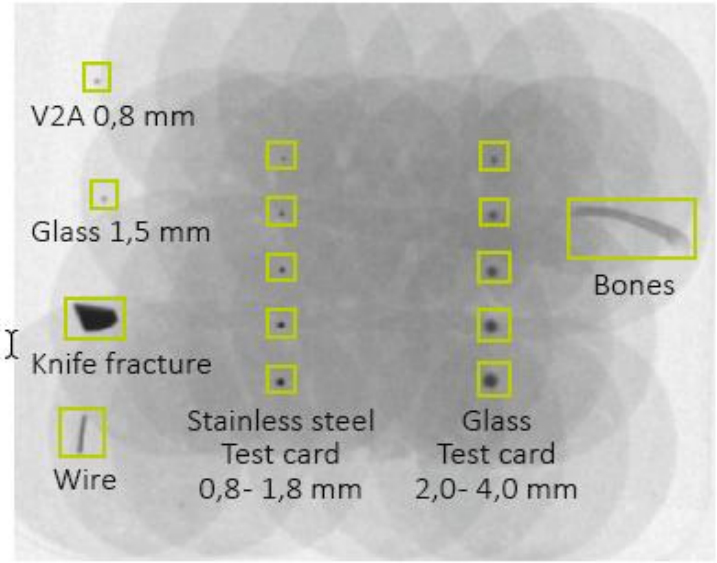
Sesotec 6-priorities-concept

- P1 Conformity & Accuracy
- P2 Safety for people & product
- P3 Simple operating concept
- P4 Hygienic design concept
- P5 Efficiency in all areas
- P6 Reliable and fast service

V2/PM: RAYCON EX2 - XRay-inspectionsystem

Conformity & Accuracy

P1



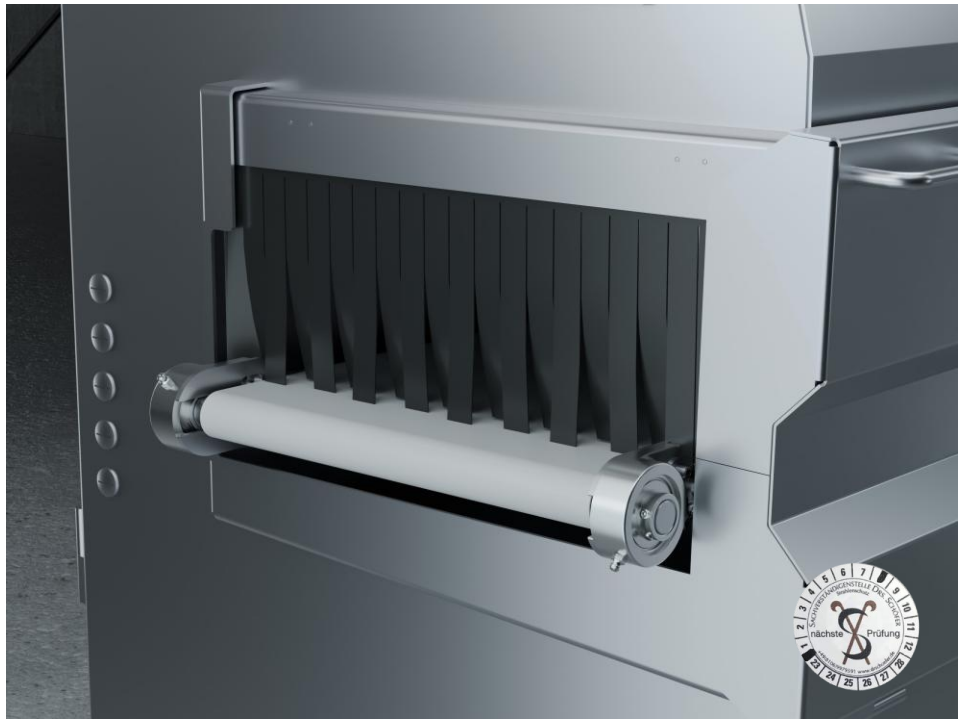
X-ray image of a packaged sliced sausage tested with different foreign bodies

Reliable detection of metallic and non-metallic foreign objects throughout the inspection area enables compliance with all current specifications and standards

- RAYCON EX2 X-Ray inspection equipment offers detection accuracy from **0.6 mm stainless steel**, better than the 0.8 mm required by IFS
- **Higher Level Compliance Package**
- **Audit Check**: Guides through the audit routine and logs all steps (quality monitoring)
- **Optimal traceability** through complete logbook and optional image archiving

Safety for people & product

P2

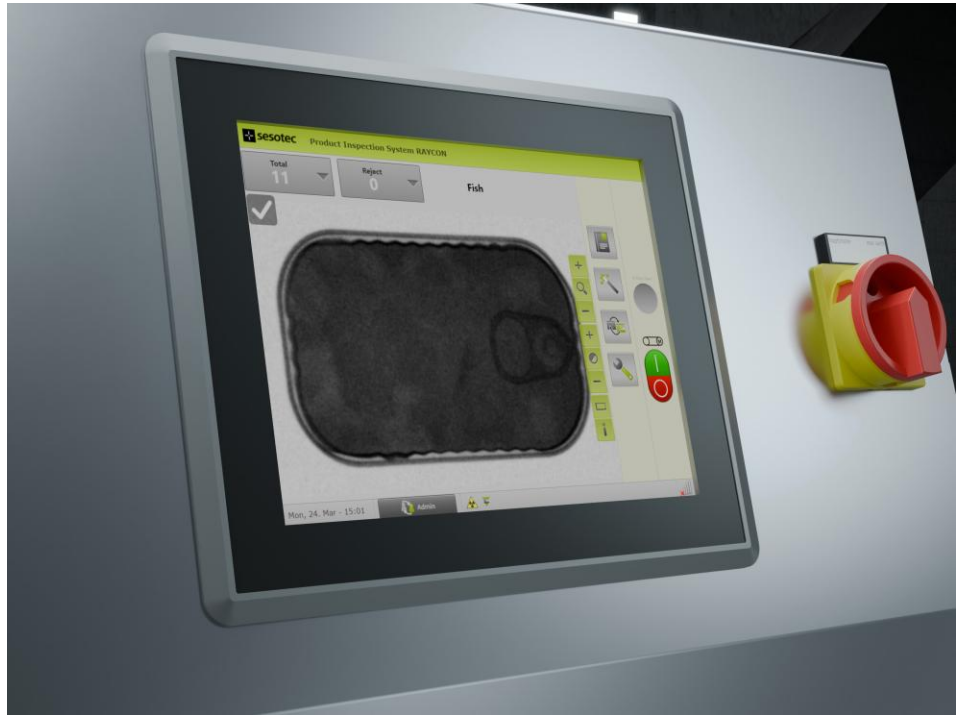


The Raycon EX2 uses low power soft x-rays to deliver high performance with all-round safe operation for people and products to international radiation standards.

- X-ray radiation for operators is **less than 0.1 µSv/h**, which eliminates the need for documentation of operating times (Duty of Documentation from 3.0 µSv/h). For example, the radiation exposure during an intercontinental flight would be 6.875 µSv/h.
- When a cover is opened, the **X-ray radiation is switched off** and the pneumatic system's air is de-energized
- The X-ray inspection equipment can be used without any concerns even for organic products

Simple operating concept

P3



Thanks to a large touchscreen, easy-to-understand user guidance and features such as the Auto-Learn function, the Raycon EX2 offers particularly easy handling in everyday use.

- **An auto-learn function** makes operation very simple and intuitive. Specific prior knowledge of image processing or x-ray operation is not required
- Integrated function for blanking out packaging clips
- All operating and service functions can be performed from the front (operation, emptying the collection container, cleaning, etc.)

Comprehensive hygiene concept

P4

Open modular design with easy access to the conveyor product zone without the need for tools simplifies cleaning and maintenance.

- **Radiation protection curtains** are suspended on the machine to provide a sanitary work space for cleaning, thus reducing the risk for recontamination after sanitizing
- **Complete construction in stainless steel and plastics** with suitability for the food industry
- The materials are designed so that they can be cleaned repeatedly without abrasion. Water runs off automatically due **to beveled surfaces**.
- Conveying area: Ptotection class IP65

Efficiency in all areas

P5

Thanks to a high belt speed of up to 1.4m/sec., up to 1000 products can be inspected per minute in real time.

- Durable and sophisticated core components with **100 W Xray source** and 0.4 mm detector
- Detection of the lifetime of the X-ray source (early warning system for source replacement)
- **Tool-free** belt and curtain change possible in just a few minutes
- Suitable for high belt speeds up to **1.4 m/sec**
- Reliable Detection of other product defects such as missing, broken or deformed products

Reliable and fast service

P6

With warranty services, a combined on-site and remote service and targeted training, you have optimal support for smooth operation.

- **Spare parts packages** including wear parts ensure maximum up-time
- **Remote service**
- Customer-specific training for operation, radiation protection and service/maintenance
- High overall system efficiency and stable operation

NEW GENERATION

RAYCON EX2

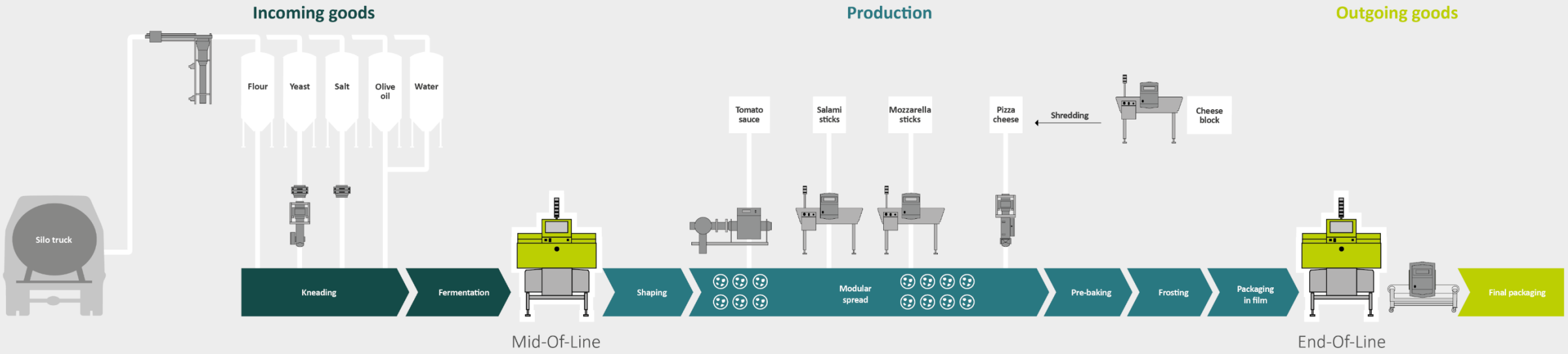
V2/PM: RAYCON EX2 - XRay-inspectionsystem

The product is suitable for you if you, ...

- want to detect and separate product defects such as missing, broken or deformed products
- have high hygienic requirements
- want to remove contaminated products from the production chain
- want to produce IFS and HACCP compliant products

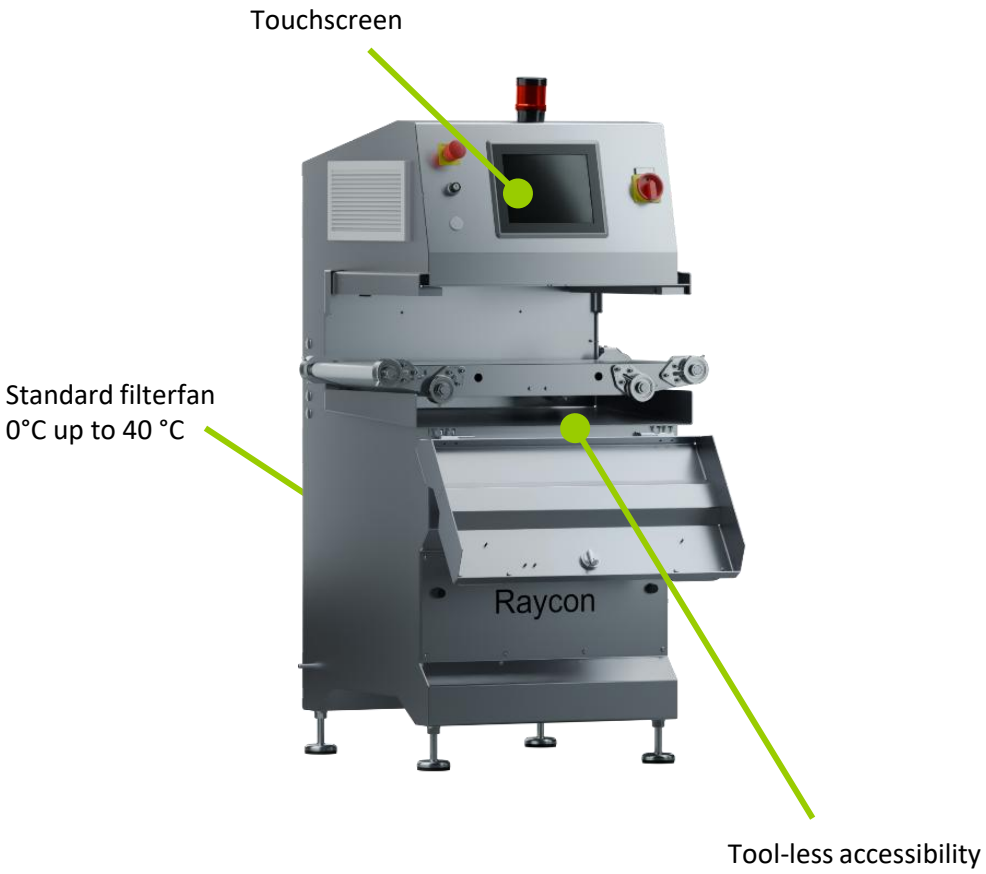
Where can the X-Ray machine be used?

- Use in industries with high sensitivity requirements
- Suitable for packaged products
- **"End of Line"** inspection
- Installation at the defined CCP’s
  (Critical Control Points)



Raycon EX2

Overview



Highlights

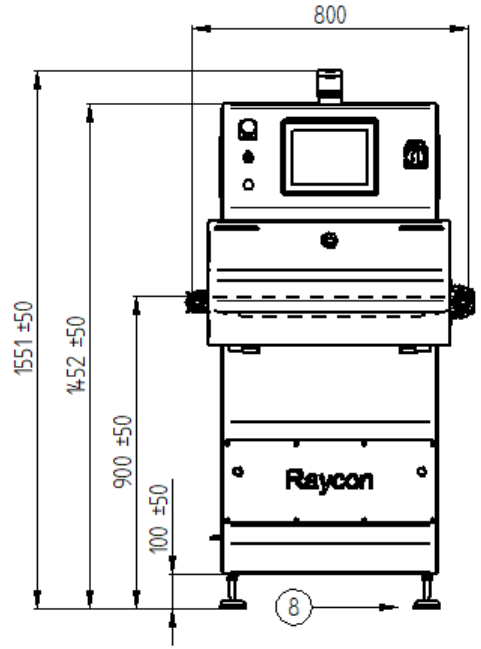
- Hygienic, modular **industrial design**
  complies with high Sesotec demand for quality
- **High quality**, long life mechanical and electrical components
- Tool-less accessibility for maintenance & cleaning
- Curtains tool-less removable within 1 minute (ergonomic position)
- Tool-less belt removal within 2 minute
- “Higher Level Compliance” package
- Small Footprint

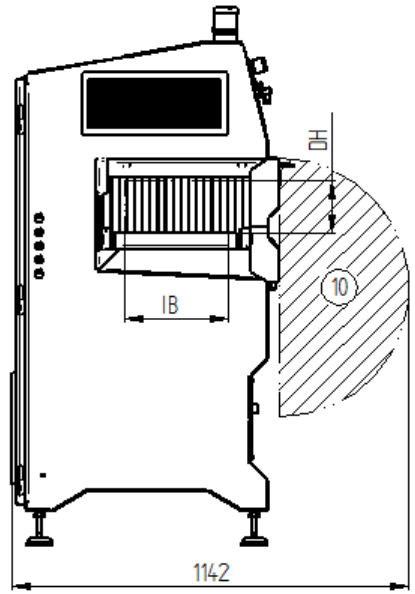
Technical details

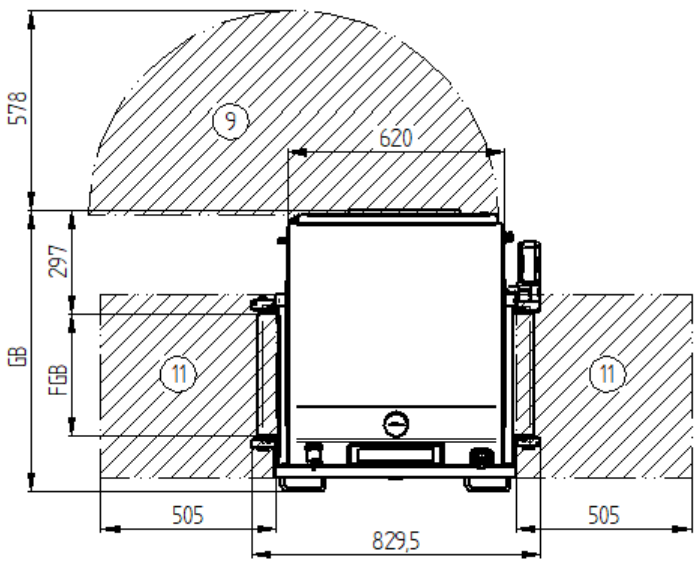
- Inspection tunnel [W x H]: **300/150 – 400/250**
- Throughput up to **1000 pcs./min.**
- 100W low energy X-ray generator
- 0.4 mm resolution
- Detection capability starting from **Ø0,6mm**
- Belt speed **up to 1.4 m/s**
- Ambient temperature **0°C to +40°C** without air conditioner
- **IP 65** within **conveyor** area
- Signal only **(800mm)**

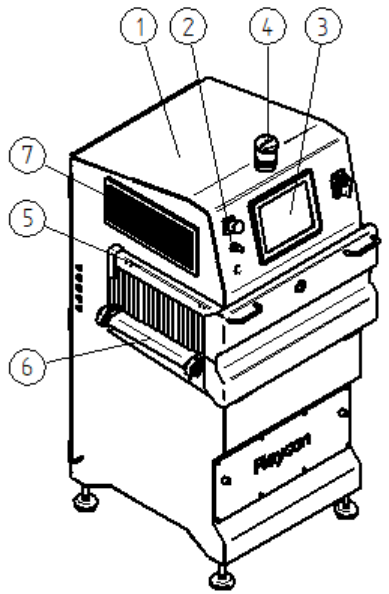
Dimensions

1 X-ray system
2 Control elements
3 LCD monitor with touch screen
4 Signal tower red/yellow/green/blue/horn
5 Protection covers
6 Conveyor belt
7 Filter fan (optional air conditioner)
8 Conveying direction (right)
9 Door opening
10 Flap opening







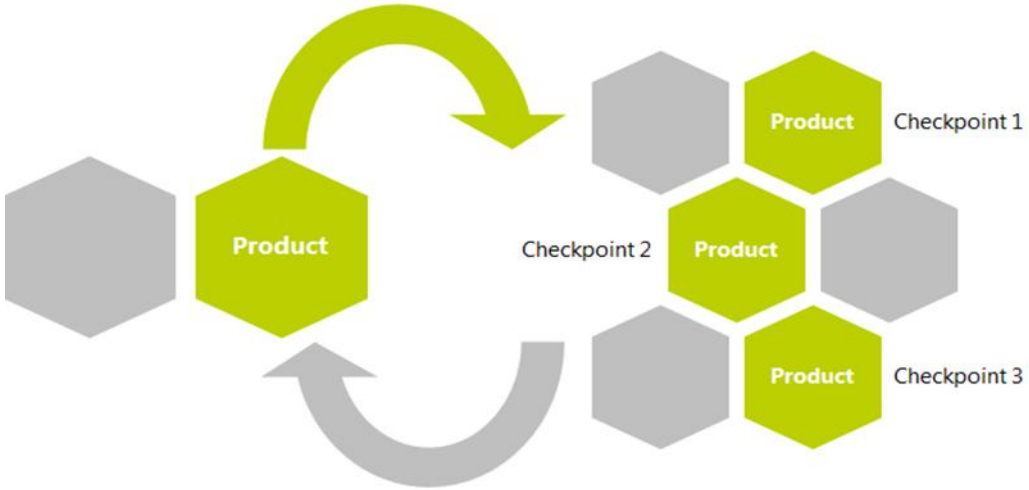


RAYCON EX2

Standard – Options – Accessories

Standard| Checkpoints

Checkpoints



Description

- While all device or product parameters can be restored by means of a backup, checkpoints are **based on parameter level.**
- Up to **10 checkpoints** can be created
- With the help of a configuration wizard, a checkpoint can be selected and its data compared with the current settings.
- After qualifying the comparison, it is possible to **restore the product data** saved under the checkpoint

Advantage

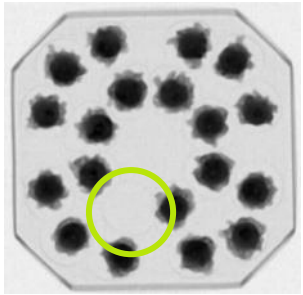
- In the course of **quality assurance**, they allow a **convenient comparison** between currently made and backed-up product settings, with the aim of being able to reconstruct individual products

Standard | Software package 1

Completeness check :

- After one of the objects to be counted has been marked on the X-ray image, a minimum number must be entered for it

  Example: Counting chocolates

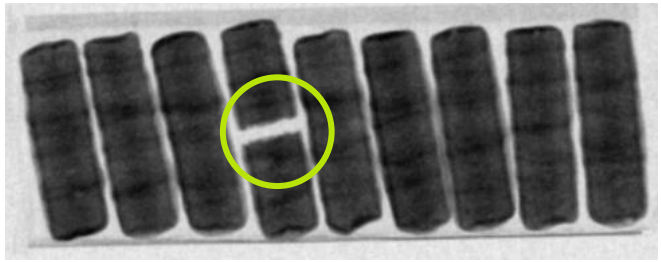


Weight function:

- The software calculates the weight of the product from the measurements and the density and can detect deviations of individual products of a line.

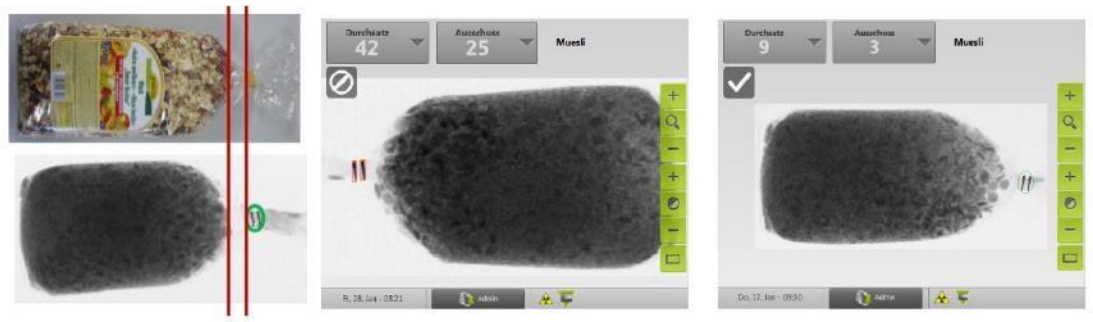
Form deviaton:

- The software **detects broken or deformed products** within the packaging.



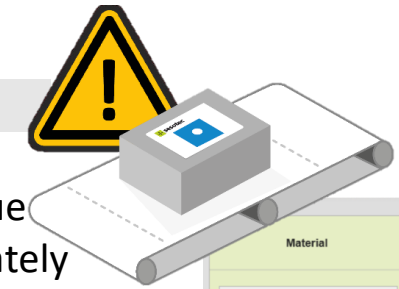
Clip-detection:

- By using the “**ignore clip” function** its possible to fade out the gray scale of the clip and therefore **increase the sensitivity** inside the product .



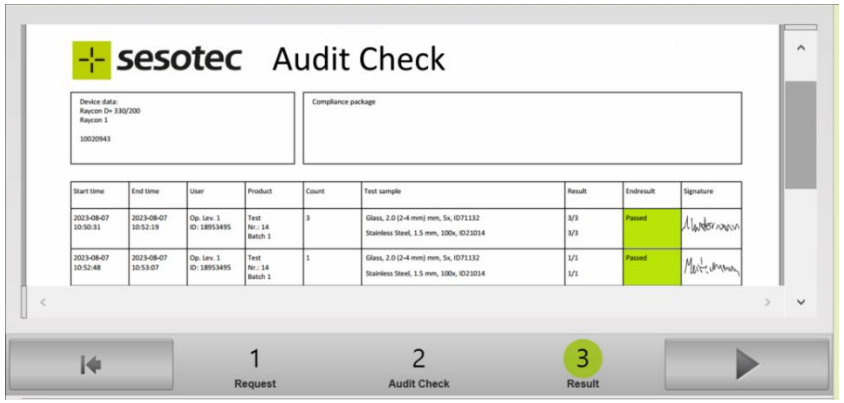
Standard | Audit-Check

Audit-Check



- When an Audit-Check is due (e.g., hourly, daily, interval, ...), the blue signal light is activated, and an operator action is required immediately
- The audit check is performed with the aid of a **sequence wizard** in 3 steps:
  - **1 Request:** Request for Audit-Check
  - **2 Audit-Check**: Promotion of the test samples as displayed in the dialog box
  - **3 Result**: Results of the individual test samples and the result of the test are transferred to the logbook and saved for later retrieval.
    In addition, a **PDF file** is created documenting all performed Audit-Checks of a **specified period with signature**
- In case of unsuccessful Audit-Check (**timeout, test sample not recognized**, ...), an error or warning message is generated depending on the setting.

Up to 5 test samples can be created or synchronized from IVP



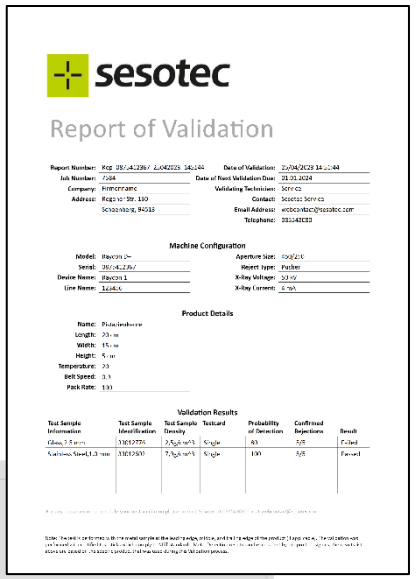
Benefits for the customer

- ✓ **Continuous quality monitoring** to ensure consistently high quality of products
- ✓ **Documentation** of internal results inclusive **signature** for external audits

Option | Licence Integrated Validation Process (IVP)

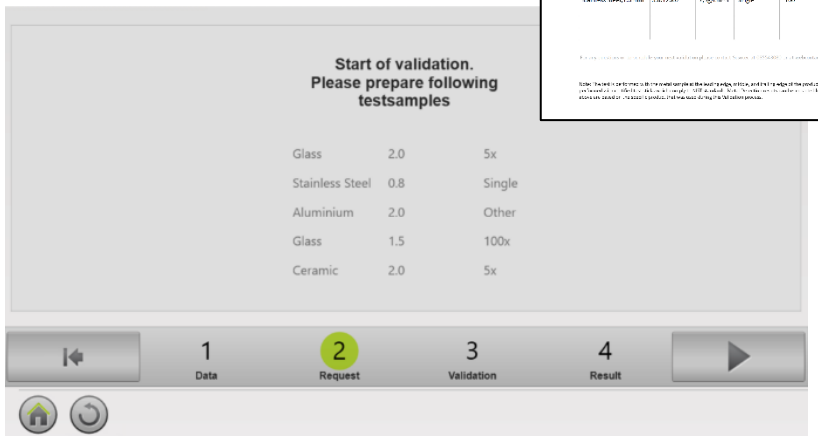
Integrated Validation Process (IVP)

- The **integrated validation process (IVP)** provides evidence that the desired quality target for the product is achieved.
- The customer can independently validate new products menu-driven and receives a **"Report of Validation"** (does not replace the annual Audit)



Validation is performed in 4 steps:

1. **Data**: Input of product and customer data, which can be seen on the certificate.
2. **Request**: request to provide the required test samples
3. **Validation**: Instructions for execution
4. **Result:** Product data and machine configuration information are evaluated and merged in the X-ray machine to create the validation certificate.



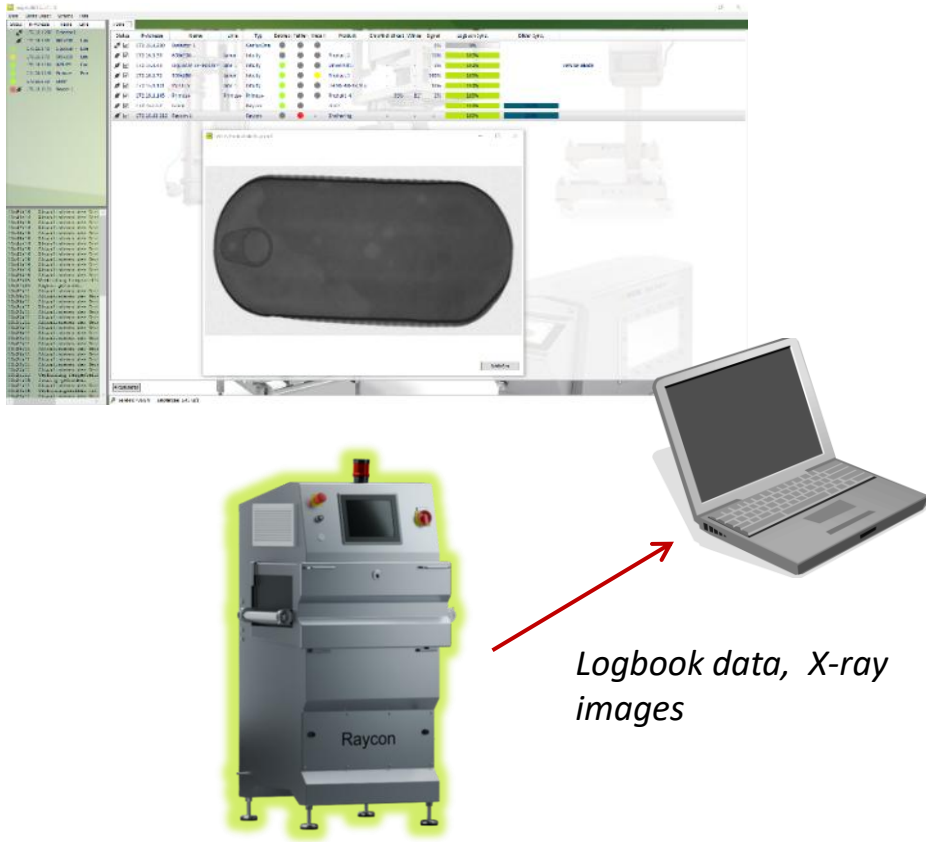
Benefits for the customer

- ✓ Simplification of complex validation processes and thus **reproducible, consistent and tamper-proof results**
- ✓ Paperless documentation and automatic notification before new validation

Accessories

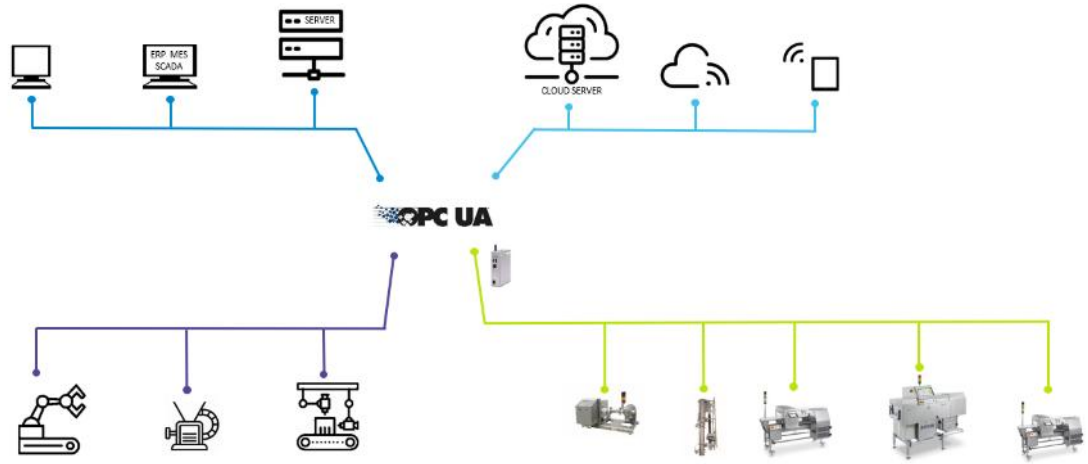
Insight.NET

Insight.NET is a software for operating and monitoring all X-ray machines from a central control station.



Logbook data, X-ray images

Compatible with Sesotec INTERLINK Modul

- Communication module for digital integration of Sesotec devices into central company networks
- Networking via OPC UA
- Targeted increase in productivity through central process analysis, monitoring and control
- Enables central control of Sesotec inspection devices, as well as remote maintenance and predictive maintenance
- Enables early detection of faults and wear through cross-device data comparison
- 

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Explore our new RAYCON FAMILY

Better. More innovative. Comprehensive.