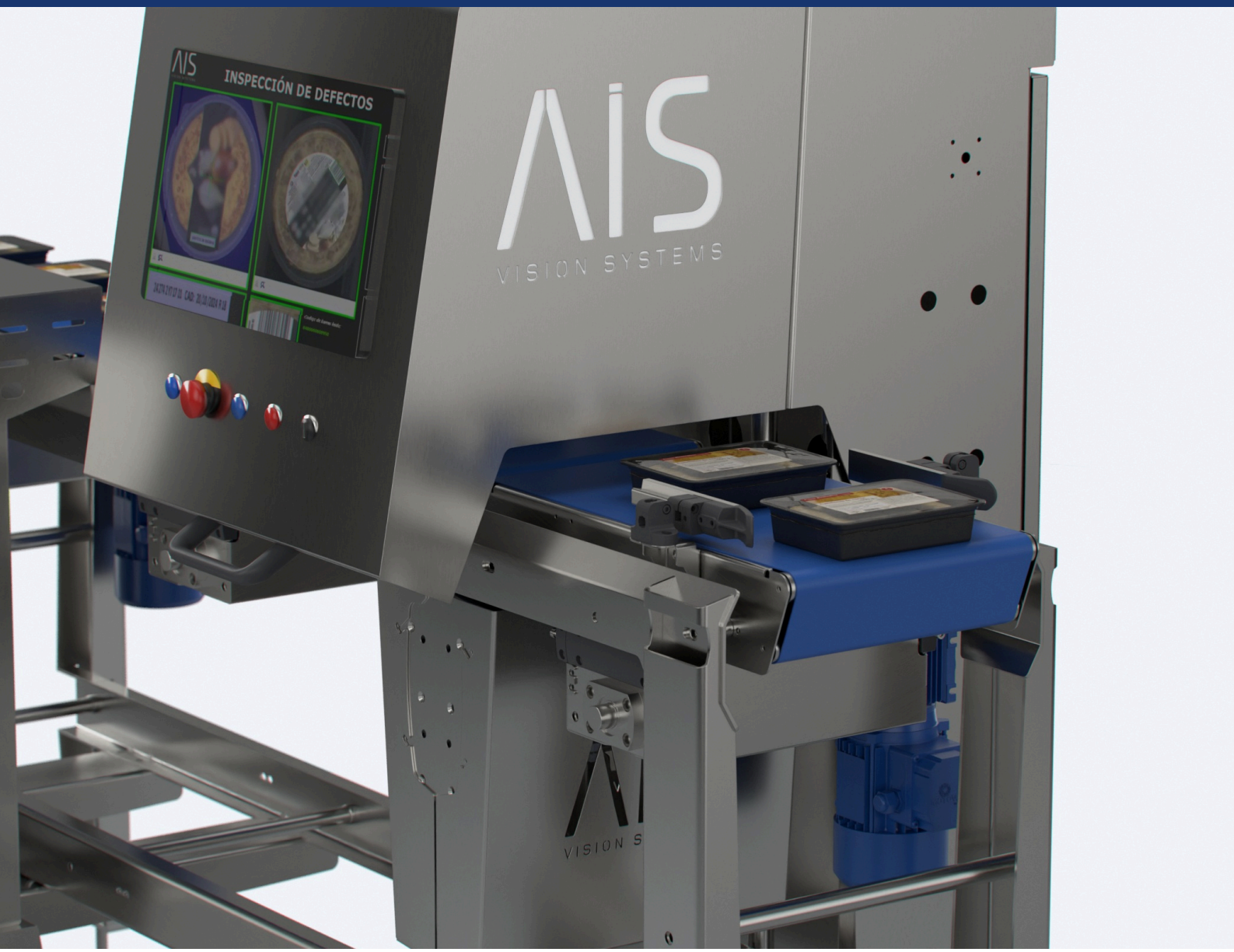
AIS
VISION SYSTEMS

Quality control on tray-sealing lines

Machine vision for real-time inspection of heat seals, packs, labels and products.



- Heat sealing: seal, film and pack
- Marking: batch, expiry date and codes
- Automatic in-line rejection

What we inspect on each pack

At AIS Vision Systems, we develop machine vision solutions for quality control in the food industry. We inspect heat seals, packs, labels and products in real time to detect defects, improve efficiency and strengthen food safety.



1 **Pack**

Deformation and damage to the tray.

2 **Label**

Presence and reading of batch, expiry date and codes.

3 **Product**

Foreign bodies and defects visible through the film.

4 **Heat sealing**

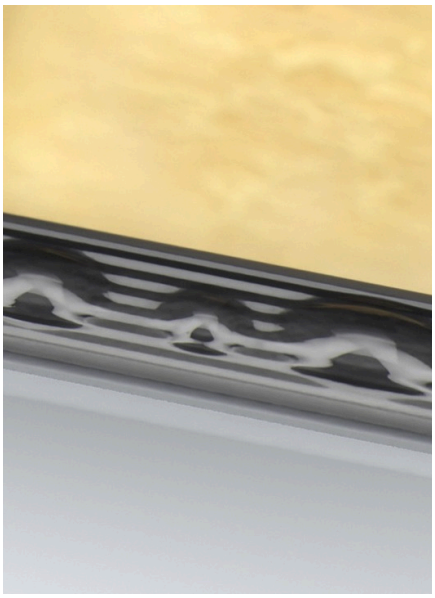
Bubbles, wrinkles and seal defects around the entire perimeter.

Solutions

- Real-time detection: AIS KARIKÓ
- OCR reading: OPTICAIS
- Automated visual inspection
- Automatic in-line rejection

Seal, pack and product on every unit

In AIS KARIKÓ, colour cameras and deep learning inspect both sides of each heat-sealed pack: up to 30,000 units/hour, 100 % of production.



Bubbles in the heat seal



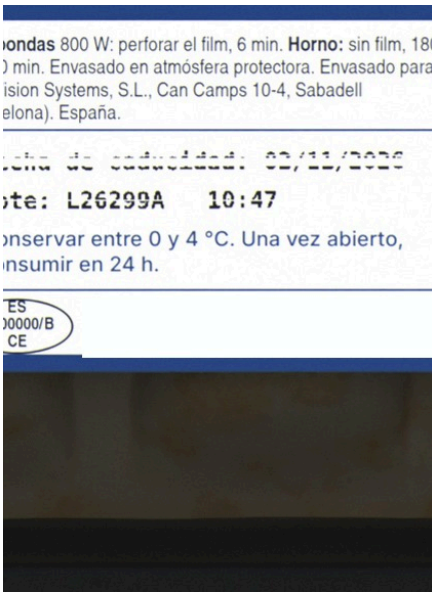
Wrinkles in the seal



Deformation



Foreign bodies



Marking verification



Barcodes

Verification across the entire pack

- Heat seal around the entire perimeter
- Film reference
- Batch, expiry date and barcodes

The scope of each detection depends on the product, samples and configuration.

Inspection and rejection, integrated into the line

AIS KARIKÓ is a compact stainless-steel system that inspects packs without orienting them and removes nonconforming units in line.



Benefits

- Defect detection using machine vision and AI
- Adaptable, versatile integration



The equipment



On the line

Equipment and software

Construction	Stainless steel, compact and ergonomic design
Cameras	High-resolution colour cameras for both sides
Lighting	Developed by AIS; dome isolates external light
Software	Proprietary deep learning engine; programming-free setup using examples
Data	Cloud backup and statistical production records

Every pack, on screen

AIS KARIKÓ shows operators images of both sides, marking readings and counters. For bread and biscuits, Rosepetal screens show each loaf's measurements, the error count and the OK or NOK result for each tray.

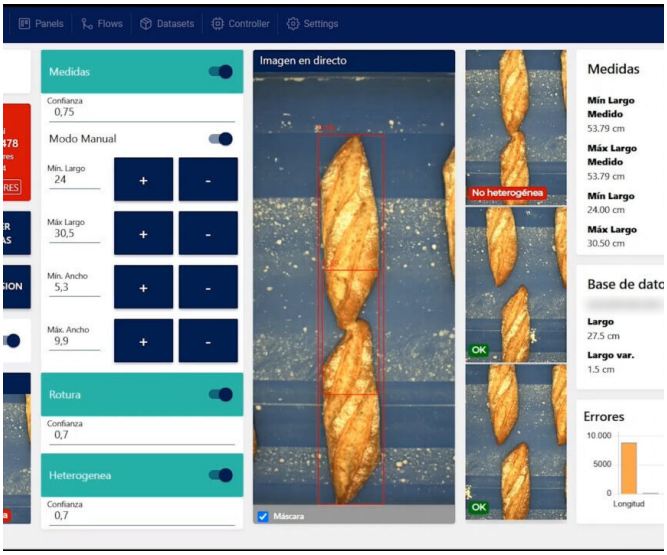


On screen

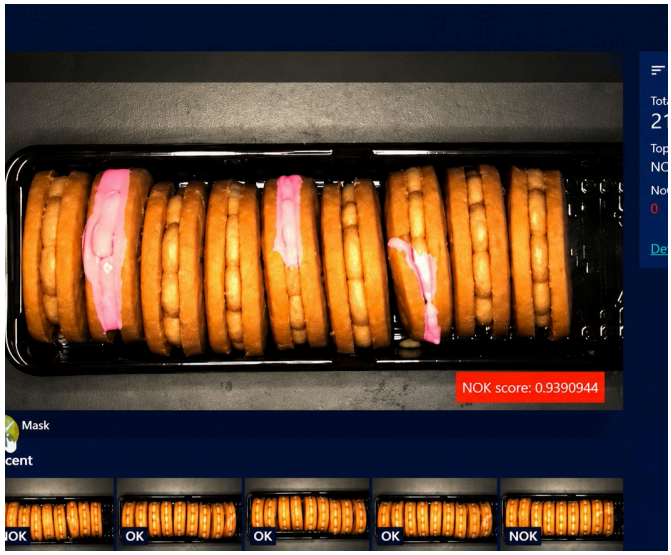
Both sides of each pack, marking readings and production counters.

Options

- Progressive or impact rejection
- Rejectors for recoverable and non-recoverable products
- Rejected-product accumulation area
- Conveyors
- Product centring device
- TrazAIS: traceability and serialisation



Rosepetal: bread



Rosepetal: biscuits

Batch and expiry date read on every pack

OPTICAIS reads and validates variable printing: text, codes and printed patterns are checked against each product's data, in line and in real time, at up to 500 items per minute.



OCR reading

Optical character recognition reads the batch, date and serial number and compares them with the data configured for the product reference.

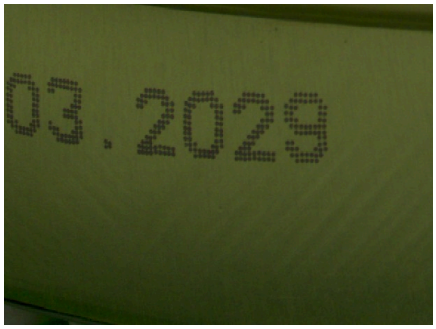
Each reading is recorded as conforming or nonconforming, with production statistics.



Legible date



Illegible date



Date on the can

Benefits

- Automated inspection of text, 1D and 2D codes and symbols
- Real-time processing
- Adaptable to different industrial environments and marking techniques
- Intuitive interface and easy integration, with product recipes

Marking technologies

- Thermal transfer
- TIJ
- Laser
- CIJ
- Dot peen
- Scribing

Dates and batches, in every format

OPTICAIS compares each marking with the expected text. On jars, AIS Vacuum can also read the date and batch on the lid, alongside its profile.







Incorrect date



Blurred marking



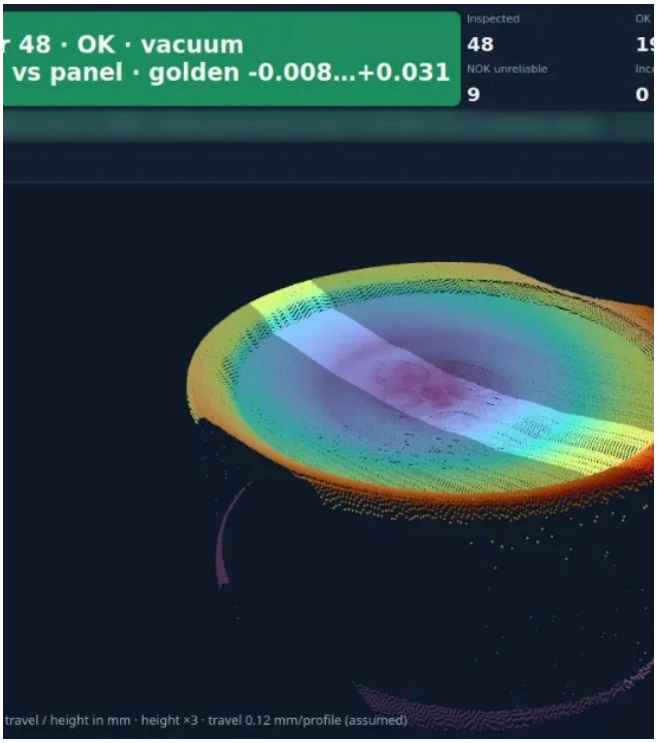
Lid with date and batch



Lid without date

Vacuum closure, jar by jar

AIS Vacuum inspects the vacuum in lids in line using 3D laser profiling: it measures the shape of each lid and compares it with a reference profile of good lids.



Each lid's profile, in 3D.

What it inspects

If the closure fails or air enters, the lid can lose the deformation caused by the vacuum and its centre may rise. A 3D laser profilometer measures each lid on the conveyor.

Containers	Jars, bottles and cans with metal or flexible lids
Reading	Optional OCR reading or OCV verification of date and batch
Rejector	Integrated with the line PLC



Correct vacuum



Raised centre

Each check at its point on the line

On a tray line, OPTICAIS reads the marking after heat sealing and AIS KARIKÓ inspects both sides of each pack after labelling, before case packing.

1 **Filling and heat sealing**

2 **OPTICAIS**
Batch and expiry-date reading

3 **Labelling**

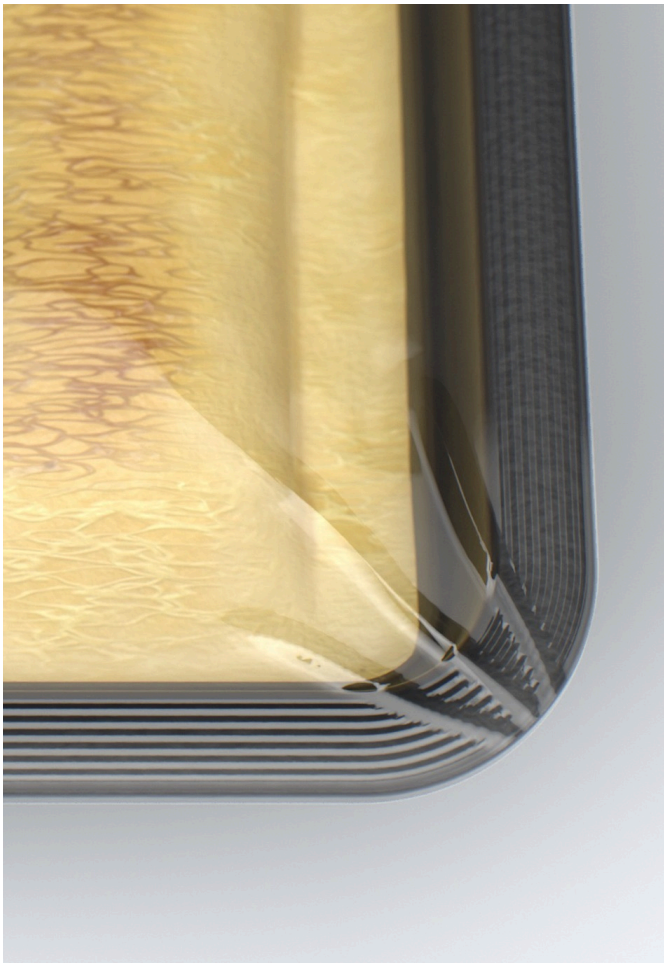
4 **AIS KARIKÓ**
Both sides of each pack

5 **Case packing**

Fecha de caducidad: 02/11/2026
Lote: L26299A 10:47
Conservar entre 0 y 4 °C. Una vez abierto, consumir en 24 h.

Marking reading

The OPTICAIS camera above the pack path reads the batch and expiry date after heat sealing.



After heat sealing



Before case packing

Less waste, more control

Machine vision provides information to act on product quality and process continuity.



Lid profile and results record

- Waste reduction: defects are detected and removed on the line
- Information to analyse incidents and improve line performance
- Support for regulatory compliance: batch, expiry date and traceability
- Immediate error detection, unit by unit



Jar closure

A portfolio for different tasks

AIS KARIKÓ	Heat seal, pack and product
OPTICAIS	Marking reading and verification
AIS Vacuum	Vacuum in lids of jars and cans

Send us samples

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