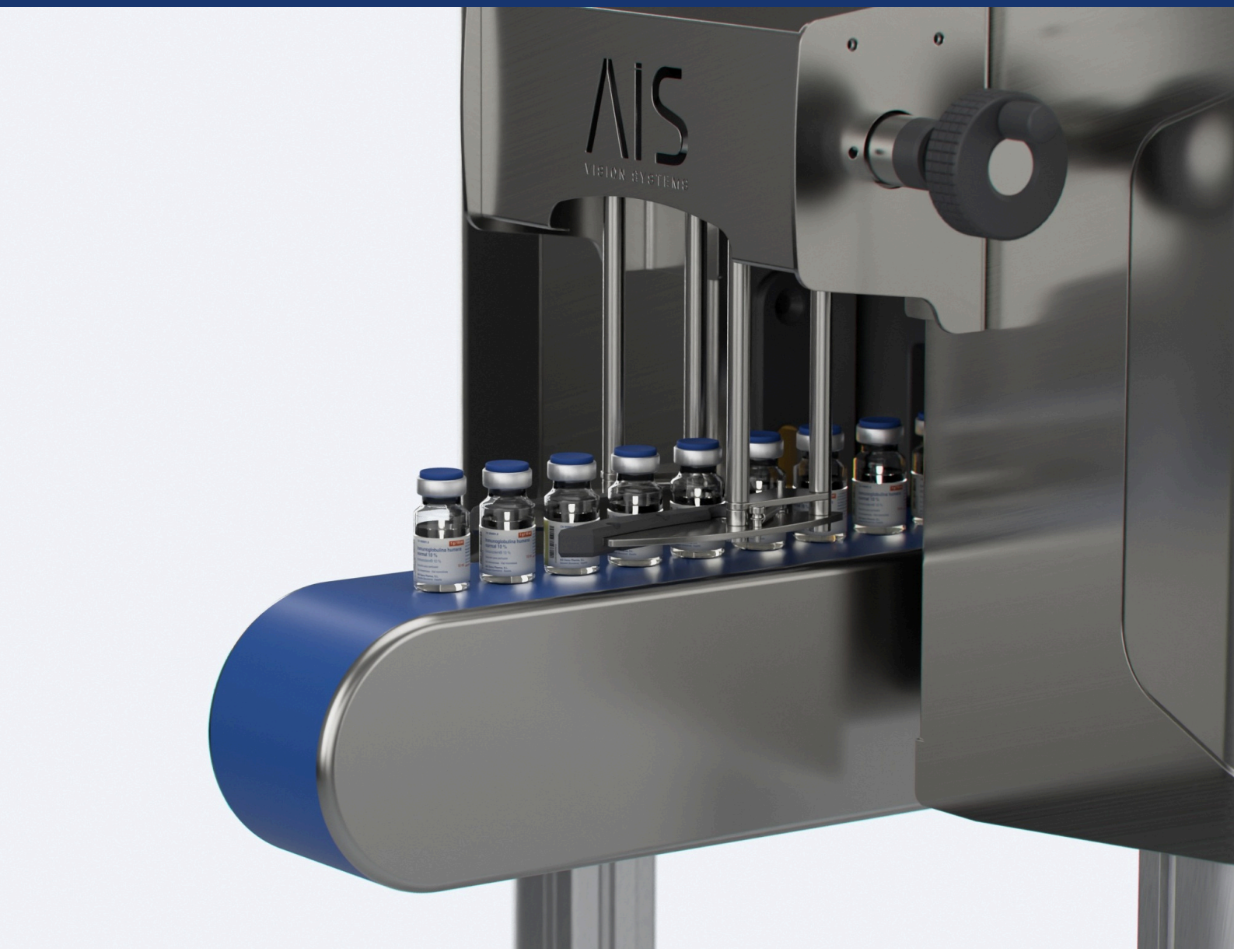
AIS
VISION SYSTEMS

Quality control on pharmaceutical lines

Machine vision for inspecting closures, labels, markings and codes on vials, blister packs and bags.



- Cap, mouth and liquid level
- Label: presence, position and content
- Batch, expiry date and serialisation

What we inspect on each vial

At AIS Vision Systems, we develop machine vision solutions for quality control in the pharmaceutical industry. We inspect closures, labels, markings and codes in real time to detect defects and maintain the traceability of each unit.



1 **Cap and mouth**
Presence, position and integrity of the closure.

2 **Liquid level**
Fill control for each container.

3 **Label**
360° presence, position and visual defects.

4 **Traceability and serialisation**
Reading of batch, expiry date and codes.

Solutions

- Cap inspection: AIS Hopper
- 360° label and visual inspection: AIS REV 360 PHARMA
- Traceability: OPTICAIS
- Serialisation: TrazAIS

Marking read in every format

On blister packs, cartons and solution bags, inspection focuses on printed content: every item of data must be legible and match the product reference.



Blister pack: product check and marking reading.

Blister pack

OCR marking inspection and serialisation enable each unit to be tracked.

- Traceability with OPTICAIS
- Serialisation with TrazAIS
- Product check
- Visual product and container inspection

Product check

Visual inspection checks the contents of each blister cavity.



Above, the correct blister pack; below, a tablet of a different colour.

Bag

On the bag's label and marking, OPTICAIS reads and verifies the printed content.

Labelling	Label presence and data
Marking	Batch, expiry date and serial number

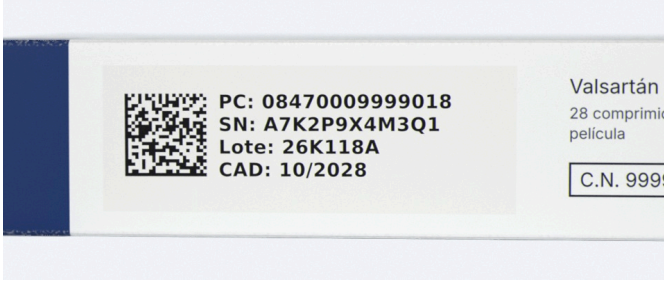
Batch, expiry date and serial number on the carton

On the carton, OPTICAIS reads variable marking (batch, expiry date, serial number and codes) and checks it against the data for each product reference; TrazAIS provides traceability and serialisation.



What is read

- OCR reading of batch, expiry date and serial number
- 1D and 2D codes: Data Matrix and QR
- TrazAIS: traceability and serialisation



Complete, legible marking



Unprinted strip: illegible serial number



Blister pack with an empty cavity



Broken tablet



Printed reverse, with batch and expiry date

360° closure and level inspection

AIS Hopper inspects the cap, mouth and liquid level of glass, PET and derivative containers without orienting them.



What it inspects

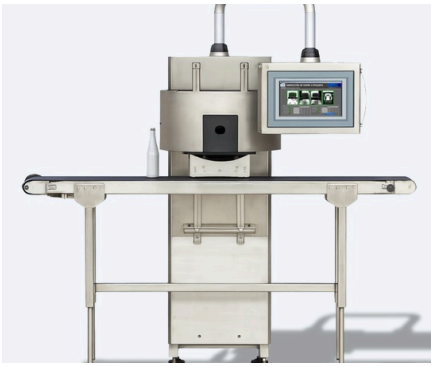
Cap	Presence, position and integrity
Tamper band	Broken or open tamper-evident band
Fill level	According to the product reference
Batch	Presence and reading



Three live views of the cap



Cap and label screen



Version with conveyor

Equipment

Cameras	Three colour cameras; optional fourth overhead camera
Throughput	Up to 30,000 units/hour
Rejection	Automatic rejection of defective units
Design	Versatile, adapted to the format

The vial label, around its entire perimeter

In AIS REV 360 PHARMA, four colour cameras inspect the presence, orientation and content of each vial label. It analyses 100 % of production, at up to 18,000 units/hour.



Missing label



Misaligned label



Incorrect orientation



Double label



Batch and expiry-date reading



Damaged Data Matrix

- Data Matrix and barcode
- Serial-number reading
- Regulatory label content
- 360° label position

Compact, stainless steel and ready for the line

AIS REV 360 PHARMA verifies labels and codes, identifies visual defects and checks label position through 360°, with integrated Rosepetal AI software.



AIS REV 360 PHARMA with its conveyor.

Equipment

Construction	INOX 304 stainless steel, without dirt-trapping recesses
Dimensions	Compact 600 × 600 mm design
Lighting	7,200-LED illuminator with controller designed by AIS
Cameras	Four colour cameras for side inspection; optional overhead camera
Dome	Illuminated and enclosed, isolates external light

Software

Engine	Proprietary deep learning
21 CFR Part 11	Compliance: audit trail and Active Directory connection for access
Profiler	Recipes from a vial or the label's PDF design
AutoDetect	Locates text, logos, codes and regulatory content
UltraOCR	Batch, expiry-date and serial-number reading
Data	Cloud backup of recipes, images and statistics

Options

- AIS PRO 8 progressive rejector
- Electric or pneumatic rejector
- Rejected-product accumulation
- Centring device at the tunnel inlet
- Conveyor belts
- TrazAIS: traceability and serialisation

From marking to traceability

OPTICAIS reads variable marking (batch, expiry date, serial number and codes) and checks it against each product reference's data, in line and in real time, at up to 500 items per minute.

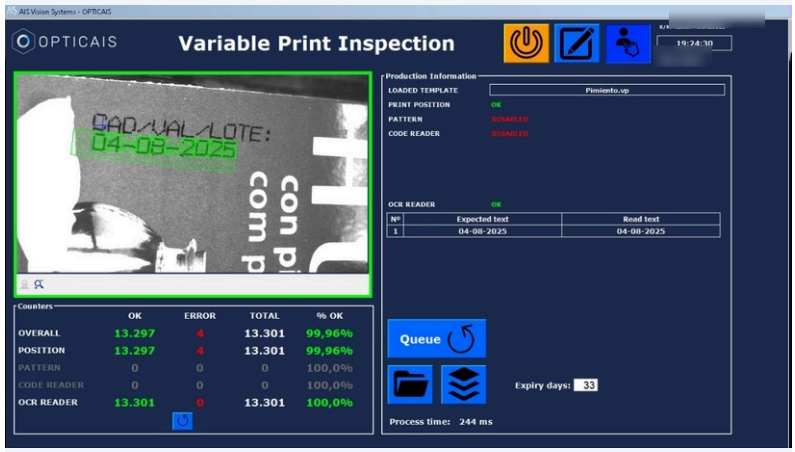


Inspection screen

Each reading is compared with the fields defined for the product reference; the result and statistics are recorded.

Date on the container

The date read is displayed beside the template's expected text, with counters for each check.



- Automated marking inspection
- Real-time processing
- Adaptable to different industrial environments
- Intuitive interface and programming-free recipes

Print quality verified on the label

The Omron V275 verifier checks the codes and printed content of each label, with electronic recording of results.



What it provides

Codes	Verification and electronic records (21 CFR Part 11, audit trail)
Printed content	OCR and OCV validation
Sensor	High resolution, 600 dpi
Architecture	Distributed, with web interface



A defective label highlighted on the V275 screen



Verification workstation with printer and software

A check at every stage

Each system is installed where the feature it inspects is produced: AIS Hopper at filling and capping, AIS REV 360 PHARMA at labelling, Omron V275 at printing and OPTICAIS at case packing.



Filling and capping



Labelling



Printing



Case packing

Benefits

- Helps meet industry regulations
- Fewer errors and returns
- Integration into GMP lines
- Traceability of each unit

A portfolio for different tasks

AIS Hopper	Cap, mouth and liquid level
AIS REV 360 PHARMA	360° label inspection
OPTICAIS and TrazAIS	Marking, traceability and serialisation
Omron V275	Label print quality

Send us samples

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