# ACELABS
SYNCRO GROUP

EYES4BAGS

Vision System for Bag-Making Machines

EYES4BAGS is an advanced machine-vision system designed specifically for plastic bag making machines, including side seal, bottom seal and multi-lane converting lines.

The system performs 100% in-line inspection of each bag before stacking, detecting material defects and contamination between layers.

Thanks to its modular hardware and high-performance imaging technology, EYES4BAGS guarantees consistent quality, reduces waste, and ensures that every defective bag is automatically identified and positioned on top of the stack for removal.
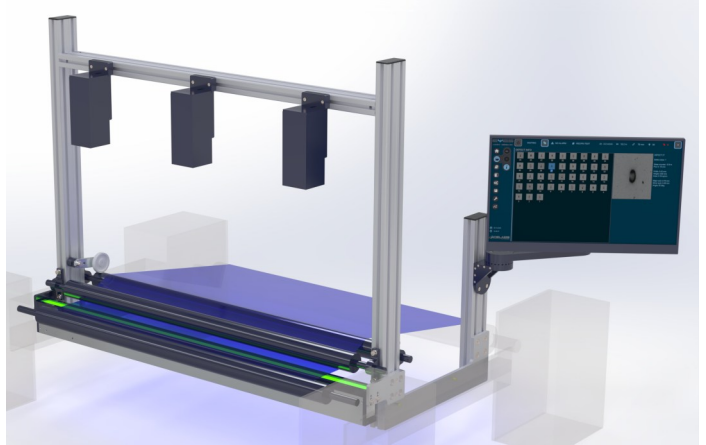
OPERATING PRINCIPLE

As the film enters the cutting section, EYES4BAGS acquires continuous line-scan images of the material.

Using encoder synchronization, the system segments the film into individual bags according to the selected bag length and the number of lanes (up to three in parallel).

For each bag, the system:

• Acquires and processes the complete image area.
• Detects and classifies defects according to the selected inspection recipe.
• Compares the defect count and type with user-defined thresholds.
• Generates a GOOD / NO GOOD result.

The system can:

♦ Stop the machine and indicate the position of the bags to be removed using an alarm light located at the defective bag position (up to 3 lanes).

♦ Control the application of a label or a marking with a printing head on the defective bag, allowing defective bags to be removed at the end of the stacking process.

♦ Control a reject trapdoor for defective bags if the machine already includes an automatic reject mechanism.

This process ensures reliable, piece-by-piece inspection even at high production speeds.

CAMERA SYSTEM

• Line-scan 4K or 8K camera modules

• Resolutions from 50–250 µm/pixel
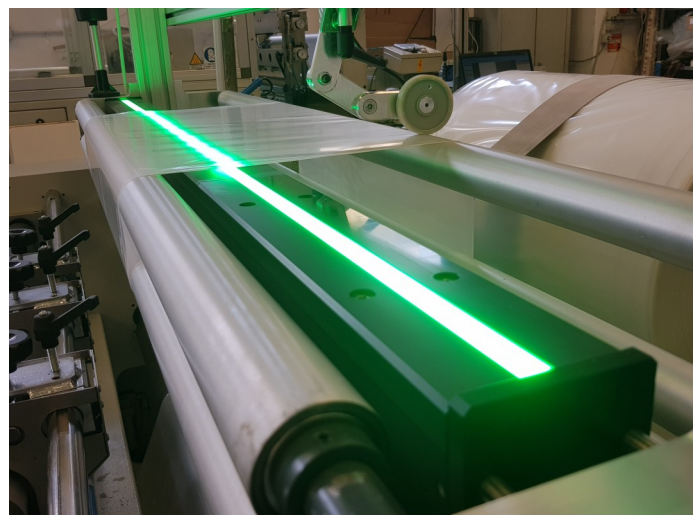
• Acquisition speeds up to 300 m/min

MAIN FEATURES

• Single-Bag Inspection Logic
• Flexible Detection Recipes
• Multi-Mode Illumination
• Stack Management / Reject Handling
• Intuitive HMI & Reporting
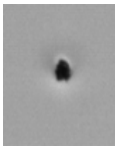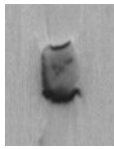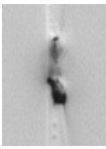• Industry 4.0 Integration

DETECTABLE DEFECTS

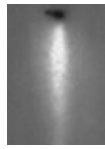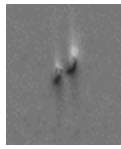EYES4BAGS can detect a wide range of defects, such as:
• Gels and bright gels
• Inclusions and foreign particles
• Bubbles or air pockets
• Pinholes
• Carbons
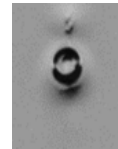• Contamination between layers as dust or insects
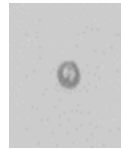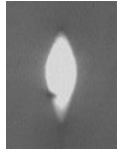• Wrinkles, creases, or localized deformation
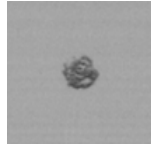
MAIN FEATURES

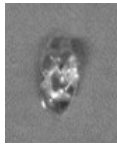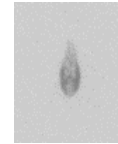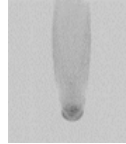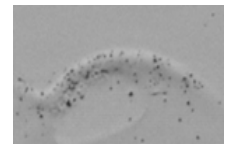BURN MATERIALS

GELS

FISH EYES

HOLES

INCLUSIONS

INSECTS

PARAFFIN

PARTICLES

TECHNICAL CHARACTERISTICS

Camera System:

- Line-scan 4K or 8K camera modules
- Resolutions from 50–250 µm/pixel
- Acquisition speeds up to 300 m/min

Illumination:

- High-uniformity backlight (standard)
- Optional reflected module for enhanced edge inspection
- Optional incident lighting for dark, thick or opaque materials

Mechanical Setup:

- Compact aluminium frame
- Adjustable mounting brackets
- Custom widths available on request

INTEGRATION & INSTALLATION

The system is delivered as a complete, ready-to-install module including:

- Camera and illumination assembly
- Control cabinet
- 21" touch-screen HMI
- Encoder interface
- Mounting supports

Control cabinets may be installed outside clean-room areas, while HMIs can be mounted inside using fixed or articulated supports.

The system is mechanically compatible with most modern bag-making machines.
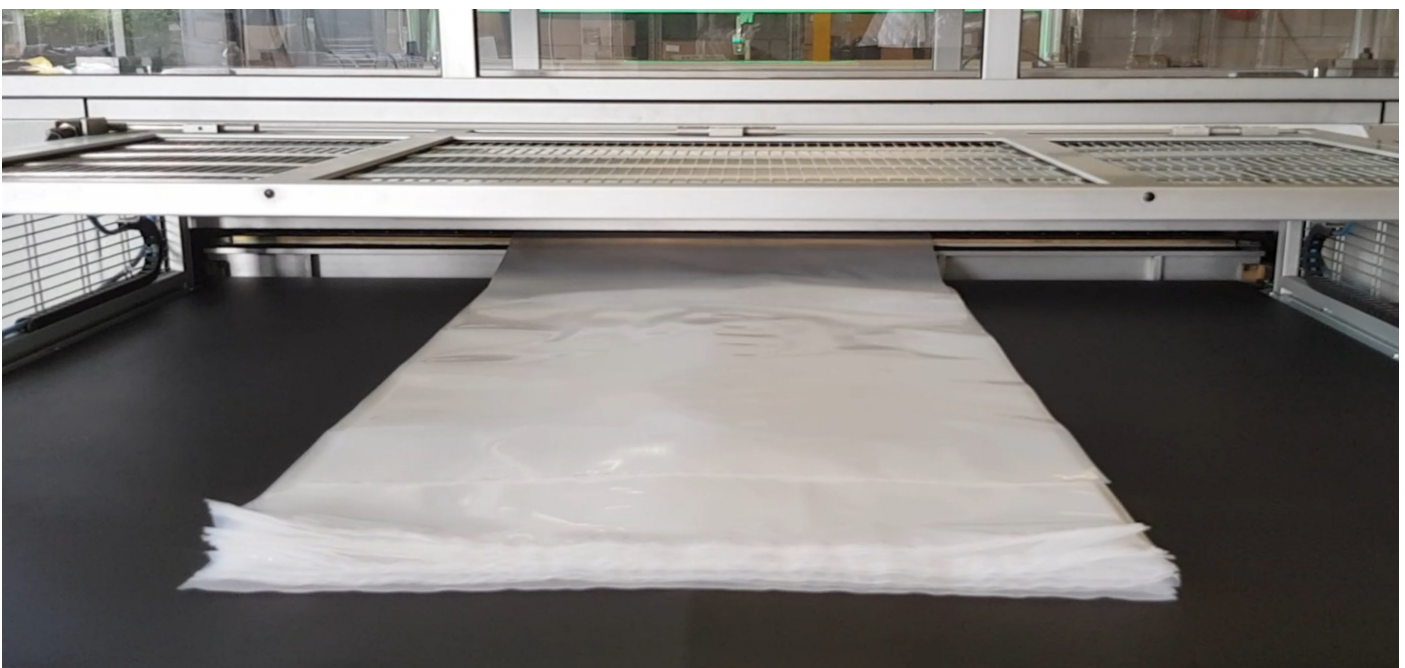
MAIN FEATURES

SOFTWARE FEATURES

### Real-Time Visualization and Monitoring

- Continuous display of the acquired film profile and individual bag segmentation.

- Instant GOOD / REJECT status for each bag, updated in real time.

- Zoom and pan tools for detailed inspection of defect images.

- Clear multi-lane visualization to support machines producing 1, 2 or 3 bags simultaneously.

Recipe Management System

- Dedicated recipes for each bag format, stored and selectable from the HMI.

- Adjustable parameters including defect sensitivity, minimum defect size, maximum defect count per bag, and allowed defect categories.

- Multi-level access control to prevent unauthorized parameter changes.

- Fast recipe switching for production changeovers.

Advanced Defect Detection Algorithms

- Pixel-level filtering and adaptive thresholding for stable detection on transparent, translucent, or lightly colored materials.

- Algorithms optimized to distinguish true defects from film surface texture or production noise.

- Automatic classification of detected anomalies by type, size, severity and lane.
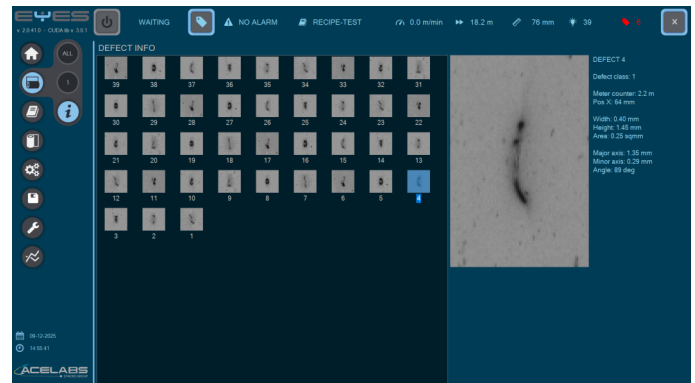
Statistical Analysis & Reporting

- Real-time counters for GOOD and NO GOOD bags, defect prevalence, and lane-specific trends.

- Production dashboards showing defect distribution over time or production batches.

- Exportable reports in CSV/Excel for traceability and quality assurance documentation.

- Optional central database connection for historical logging across multiple machines.

Machine Integration Logic

- Deterministic calculation of reject timing based on encoder feedback and machine dynamics.

- Configurable stop logic ensuring the defective bag reaches the top of the stack with millimetric precision.

- Digital I/O interfaces for interacting with reject systems or alarms.

- OPC-UA connectivity for integration into modern plant architectures.

Diagnostic and Maintenance Tools

- Continuous monitoring of camera exposure, lighting intensity, encoder signal quality and internal processing load.

- Automatic alerts in case of abnormal operating conditions.

- Built-in remote assistance tools for service teams.

- Event logs for troubleshooting and maintenance auditing.