KPM
WE CRAFT ASSURANCE

P-SERIES VISION INSPECTION SYSTEMS

Automated In-Line Vision Inspection for Processed Meat and Poultry

The KPM Analytics P-Series Vision Inspection Systems bring cutting-edge automation to the meat and poultry industry. These systems are designed to automatically classify and sort meat and poultry products based on their dimensional properties and visual characteristics, examining both the top and bottom surfaces. They operate at full-line speeds, ensuring high efficiency in the production process.

The P-Series Systems incorporate the latest advancements in vision inspection technology, making use of multi-spectral imaging and artificial intelligence (AI) capabilities. These technologies empower packers and processors to fortify their quality inspection and food safety programs. With the ability to detect foreign materials and ensure precise sorting, these systems contribute to maintaining the highest standards in product quality and safety within the meat and poultry industry.

Redefine Quality
- Achieve 100% product inspection with accurate, consistent, and objective measurements.
- Reduce labor costs and remove human error from your quality assurance process.

Protein Tailored Solutions
- Designed and proven to meet the sanitary & operational demands of meat and poultry processors.
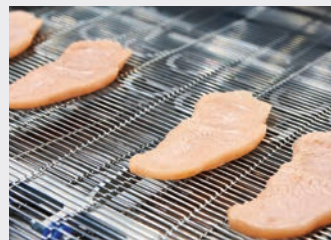
Data-Driven Efficiency
- Comprehensive data collection at all stages of processing fuels effective decisions.
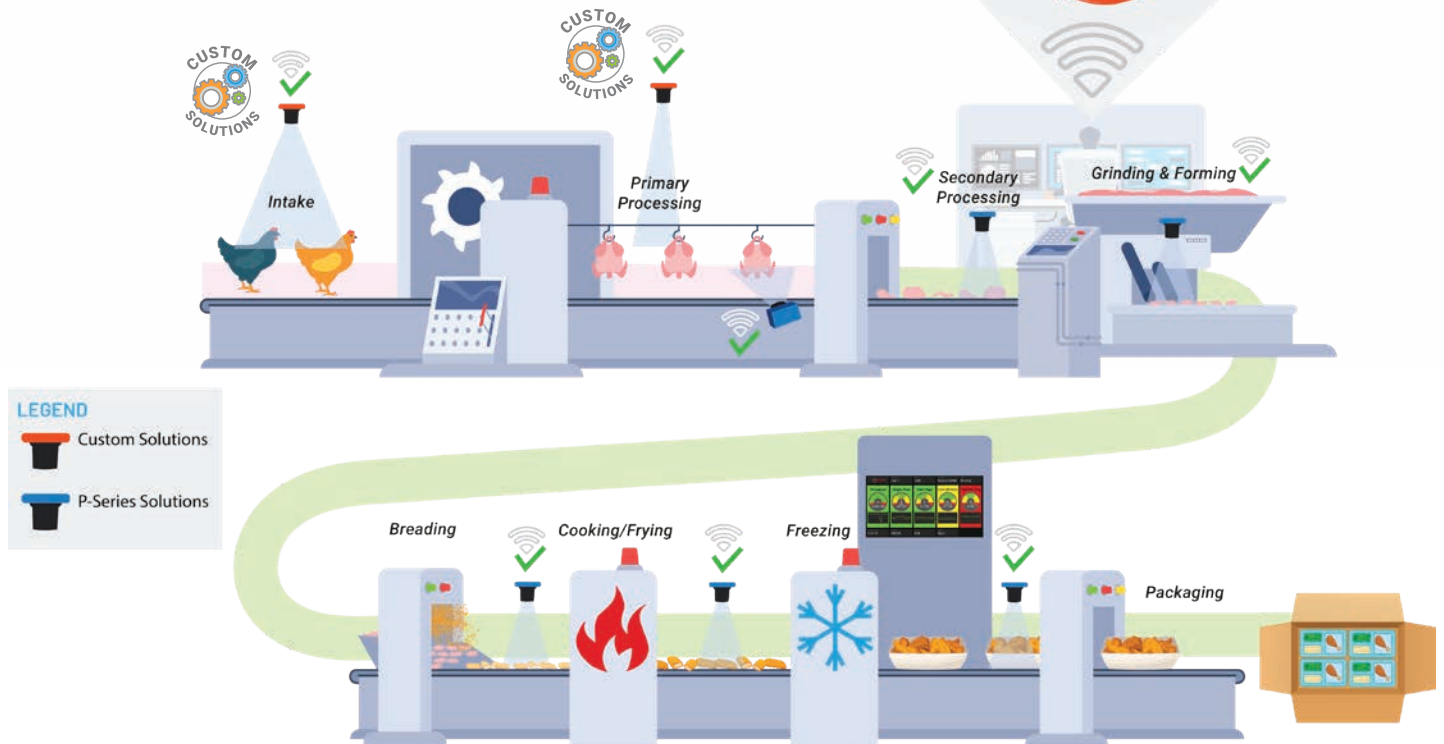
Cut Waste
- Balance quality and production efficiencies by rejecting only critical defects from the production flow.
- Respond to production issues as they happen.
- Leverage production data for better decisions.

CONFIGURABLE SOLUTIONS FOR WHOLE, PORTIONED, AND PROCESSED PROTEIN PRODUCTS
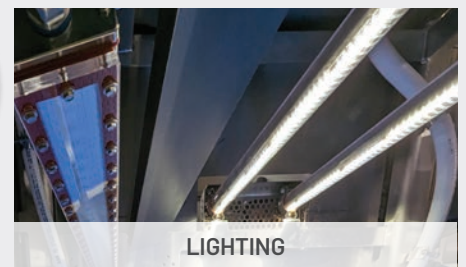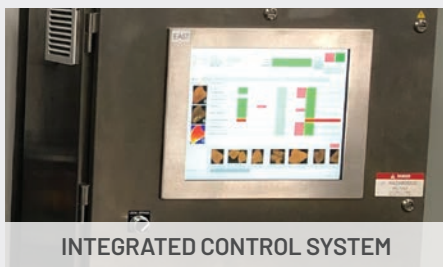
End-to-End Process Control & Food Safety

P-Series and other KPM custom solutions collect data, monitor process performance, and control product quality at each stage of production.

Data Collection → Corporate Data Warehouse → End User → Reports

LEGEND
- Custom Solutions
- P-Series Solutions

Intake · Primary Processing · Secondary Processing · Grinding & Forming

Breading · Cooking/Frying · Freezing · Packaging

CORE P-SERIES SYSTEM COMPONENTS

INTEGRATED CONTROL SYSTEM

CAMERAS & LASER

LIGHTING

CONVEYOR & PRODUCT HANDLING

REJECTION & SORTING

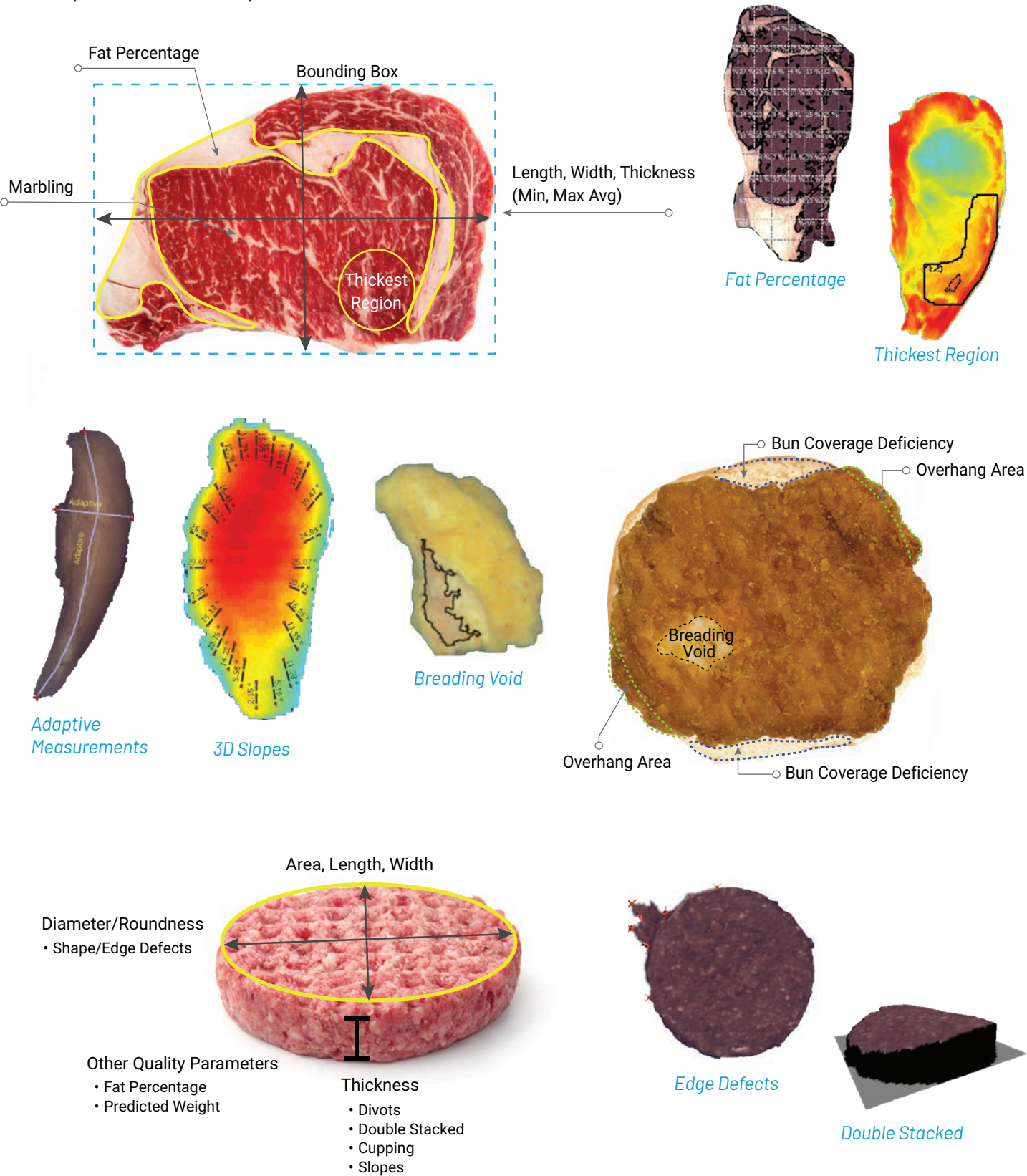SOFTWARE & DATA

Measurement Capabilities

P-Series Systems are available with an extensive product measurement library developed through years of experience working with meat and poultry processors. Specialty tools allow users to create and configure measurements that suit their product needs. Examples include:

Fat Percentage

Bounding Box

Marbling

Length, Width, Thickness (Min, Max Avg)

Thickest Region

Fat Percentage

Thickest Region

Adaptive Measurements

3D Slopes

Breading Void

Bun Coverage Deficiency

Overhang Area

Breading Void

Overhang Area

Bun Coverage Deficiency

Area, Length, Width

Diameter/Roundness
• Shape/Edge Defects

Other Quality Parameters
• Fat Percentage
• Predicted Weight

Thickness
• Divots
• Double Stacked
• Cupping
• Slopes

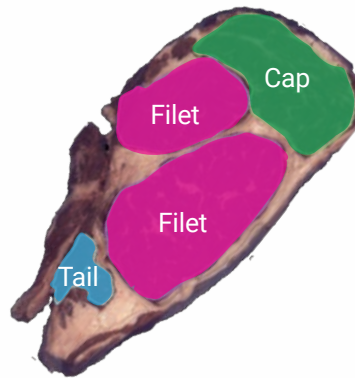*Edge Defects*

Double Stacked

AI-Driven Inspection Innovations

The P-Series System uses statistical analysis and deep learning to expand inspection capabilities and increase ease of use.

ANOMALY DETECTION

Trained on your product to identify anomalies such as defects and foreign materials.
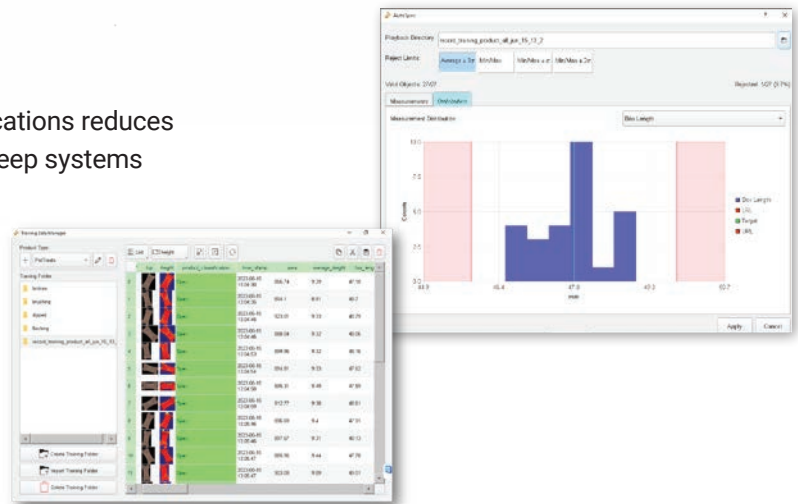
FEATURE ANALYSIS

Identify and measure elements of your product.

SIMPLIFY SETUP AND MAINTENANCE

Automated learning of product features and specifications reduces complexity and promotes continuous operation to keep systems running longer with less work.

TRAINING AND DATA HANDLING TOOLS

Support deployment and configuration with a purpose-built training environment.

Foreign Material Detection

Expand your capabilities to detect low density defects that can't be found by x-ray such as foils, films, plastic, paper, and compositional defects.

Non-Visible Spectrum
Infrared and hyperspectral imaging analyze properties like moisture and oil content to enable advanced foreign material detection.

Visible Spectrum
High-resolution calibrated cameras detect foreign materials on top and bottom surfaces.

Advanced Analysis
KPM's advanced measurement and AI tools are able to pick up minor variations in color, texture, size, and shape patterns.
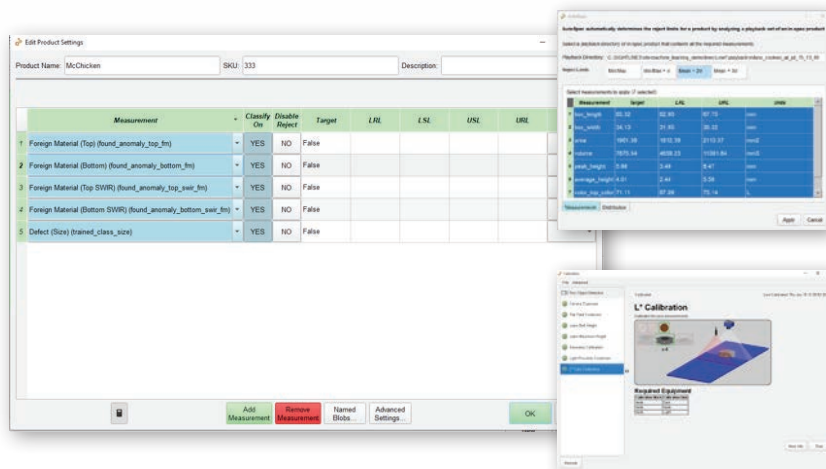
Paper   Rubber   Wood   Plastic

measura®
SOFTWARE SOLUTIONS

The measura® software suite enables simple setup and operation of the P-Series System. Easy to use and intuitive, the measura® software suite collects real-time quality metrics and generates reports on product trends and production performance, helping companies make data-driven quality control decisions with confidence.

measura® toolbox

Dedicated tool to configure products and measurements and calibrate the system.

measura® inspection

Control and monitor the operation of the vision system from the user interface. Displays real-time feedback to operators with trends, lane data, defect summaries, and more.

measura® dashboard

Visualize key production metrics throughout your facility in real time and alert operators to issues as they happen.

measura® analytics

Automated data extraction facilitates the creation of valuable reports, available on-demand or via scheduled delivery. Additionally, data can be collected from multiple production lines and various facilities to provide a comprehensive overview of your operations.

Utilizing Data to Modernize Your Organization

DATA COLLECTION
P-Series Systems collect objective product measurements and extensive process metrics, helping companies establish and maintain optimal standards for quality.
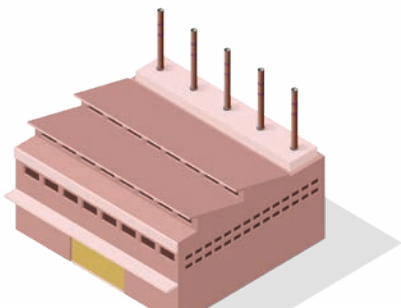
DATA VISIBILITY
The data collected by the P-Series System helps support the efforts of various groups within an organization, including:

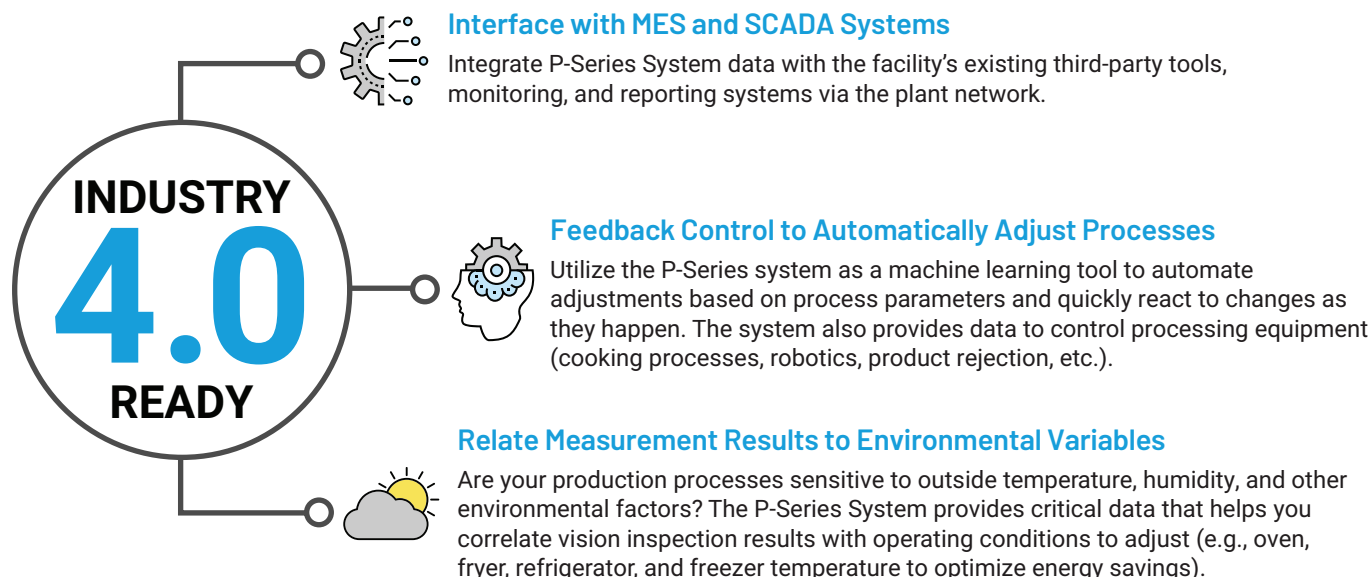| FLOOR LEVEL	PLANT LEVEL	CORPORATE LEVEL
Enable operators on the processing floor to make decisions on quality and food safety.	Determine root causes to process issues and formulate plans for improvement.	Analyze performance trends company-wide; aids in the decision to invest resources that correct global challenges.

DATA INTEGRATION
The P-Series System integrates seamlessly with existing quality control platforms to support Industry 4.0 efforts.

INDUSTRY 4.0 READY

Interface with MES and SCADA Systems
Integrate P-Series System data with the facility's existing third-party tools, monitoring, and reporting systems via the plant network.

Feedback Control to Automatically Adjust Processes
Utilize the P-Series system as a machine learning tool to automate adjustments based on process parameters and quickly react to changes as they happen. The system also provides data to control processing equipment (cooking processes, robotics, product rejection, etc.).

Relate Measurement Results to Environmental Variables
Are your production processes sensitive to outside temperature, humidity, and other environmental factors? The P-Series System provides critical data that helps you correlate vision inspection results with operating conditions to adjust (e.g., oven, fryer, refrigerator, and freezer temperature to optimize energy savings).

COMPANION PRODUCTS

As you consider the P-Series System for your organization, KPM Analytics is pleased to offer these companion products, all of which offer robust sanitary design features tailored for use in food production facilities. These options are thoughtfully crafted to further support your food quality and safety programs.
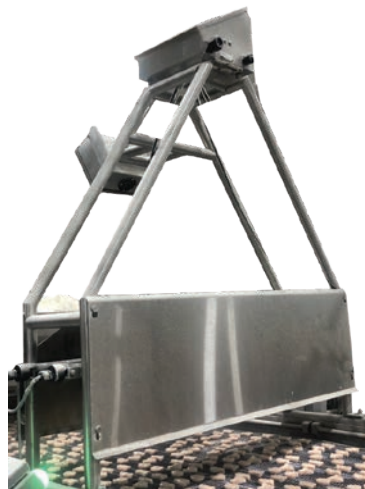

TheiaVu® P-Series Off-Line Vision Inspection System

A cost-effective offline vision inspection system used for quality sampling of meat and poultry products.

Smart Vision Works SiftAI® Foreign Material Detection System

Seamlessly integrates with existing bulk material flows, utilizing AI to effectively identify challenging items like hair, plastic, cardboard, and other difficult-to-detect indigenous materials.

Over-Line Vision Inspection System

Our Over-Line systems are mounted above your existing production line for process monitoring at full line speed. Implementation is faster and easier making this a great reduced-cost option for 100% inspection.

CUSTOMIZATIONS AND OPTIONS

Available custom configurations for various applications.

Customizations

- Camera configurations
- Rejection systems
- Top and bottom imaging
- Conveyor width
- Hygienic/sanitation options

Options

- Dashboard
- Clean in place
- Cooling
- Metal detector integration

Belt Lifter for Cleaning in Place

measura® Dashboard