

NEXT GENERATION AI-POWERED FOREIGN MATERIAL DETECTION SYSTEM

Advanced Artificial Intelligence Built to Fortify Food Production Processes & Protect Consumers

OVERVIEW

The SiftAI® FM HD System enables artificial intelligence inspection capabilities for food production environments, including those with strict sanitary conditions. SiftAI® FM HD is a complementary system to traditional foreign material detection technologies like X-rays and metal detectors. Each system is integrated into existing processes to detect foreign objects in free-flowing product, especially traditionally challenging materials like:

- Plastic
- Films
- Paper/cardboard
- Rubber
- Wood
- Uniform/PPE Fragments
- Indigenous material (Fat & sinew clumps, ear tags or ID chips), and much more

SMARTER AI & ENHANCED HYGIENE DESIGN

The SiftAI® FM HD is a significant upgrade to preceding platforms. From its improved IP69K-rated design, high-density lighting, high-resolution imaging, and years of AI model refinement, the system is better equipped to address the food safety needs of the entire food industry, including the following markets:

- Beef, pork, and poultry processing
- Fish, shellfish, and seafood processing
- Potatoes
- Individual quick frozen (IQF) ingredients (diced potatoes, fruits, vegetables, and protein products)



SIFTAI® FM HD SYSTEM FEATURES

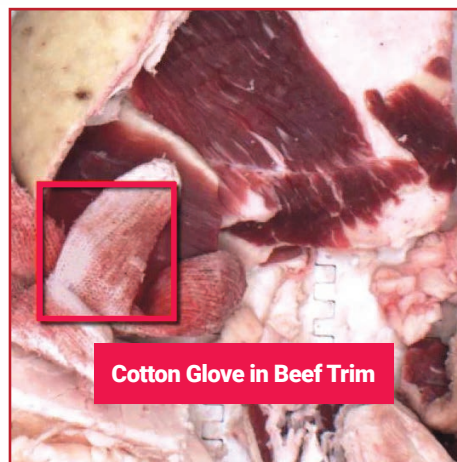
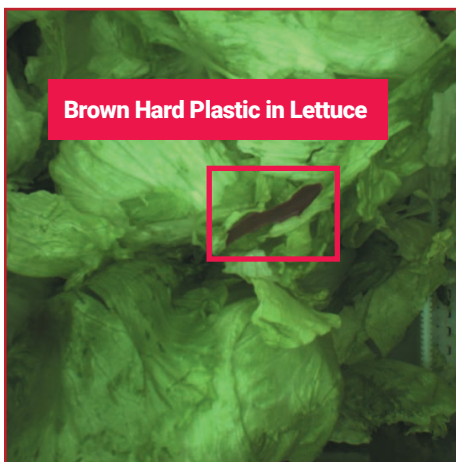
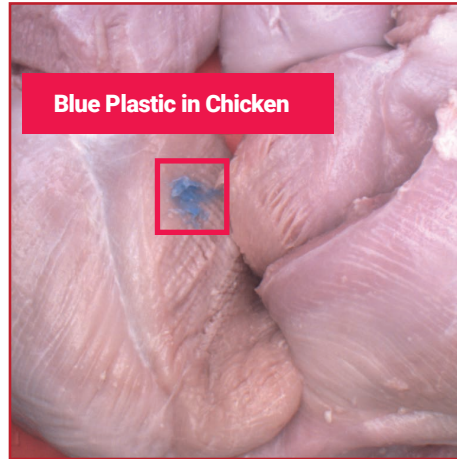
- Proven AI models and machine learning ensure food safety.
- Accurately inspects products with natural and organic variation.
- Dual-gasket IP69K-rated stainless steel enclosure for full wash down sanitary production environments.
- System software generates real-time data for operator and QA review.
- Operates on 120V or 240V power.

SIFTAI® FM HD SYSTEM BENEFITS

- **Built for sanitary processing environments:** Enable AI-powered inspection without adjusting cleaning procedures.
- **Identify challenging foreign materials:** Accurately detects visible high- and low-density objects like plastic, cardboard, rubber, wood, indigenous materials, and objects that are typically challenging for other detection methods.
- **Improved product quality and yield:** Allows processors to operate at higher throughput and detection accuracy compared to human-only inspection.

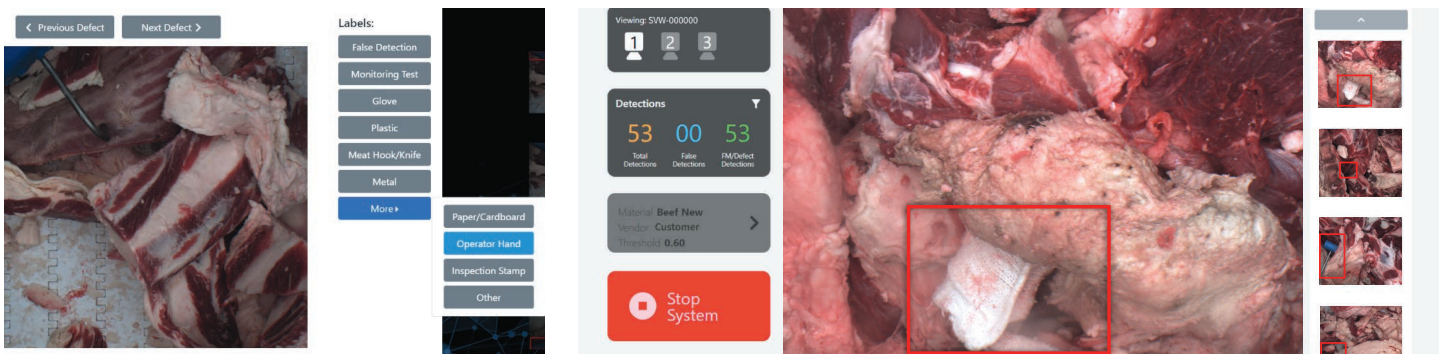
IF YOU CAN SEE IT, SIFTAI® WILL FIND IT

The SiftAI® FM HD system is a powerful machine vision platform that offers superior vision inspection. It leverages proprietary software to train and operate artificial intelligence models for any product. A system can be configured to utilize existing or KPM-designed rejection mechanisms.



SIMPLE SOFTWARE INTERFACE & REPORTING CAPABILITIES

Operators can watch a real-time stream of production. Additionally, operations can review historical data of detections. SiftAI® FM HD systems include TensorUP® high-performance computing to run several AI models simultaneously.

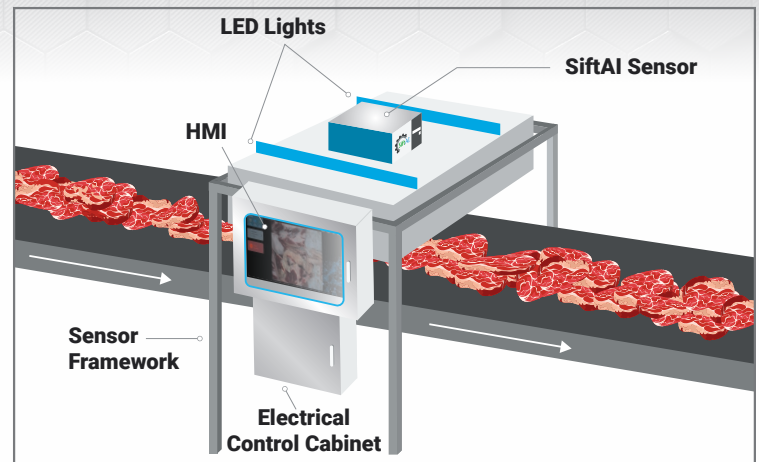


Apply the appropriate foreign material label at-line via the operator interface (operator hand with meat hook shown here).

Users can review a complete log of foreign materials detected with the capability to drill down to specific types.

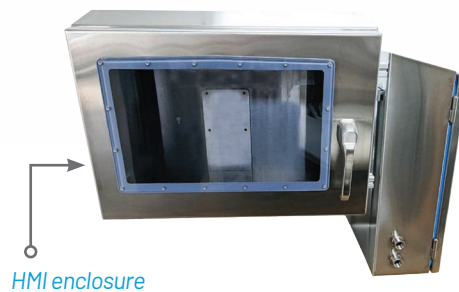
FOOD GRADE SANITARY DESIGN

SiftAI® FM HD is enclosed in an IP69K-rated design for use in protein, seafood, and other food processes with strict sanitary requirements and harsh manufacturing environments. The fully enclosed unit features a durable structure made of food-grade stainless steel and hard-coated polycarbonate. The system is hygienically designed to prevent harborage making it ideal for full wash down.

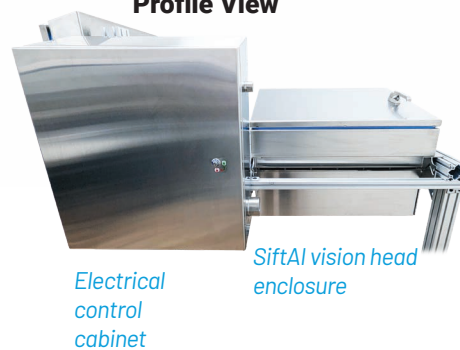


Typical SiftAI® FM HD configuration on a beef trim line

Front (HMI) view



Profile View



EASE OF INSTALLATION

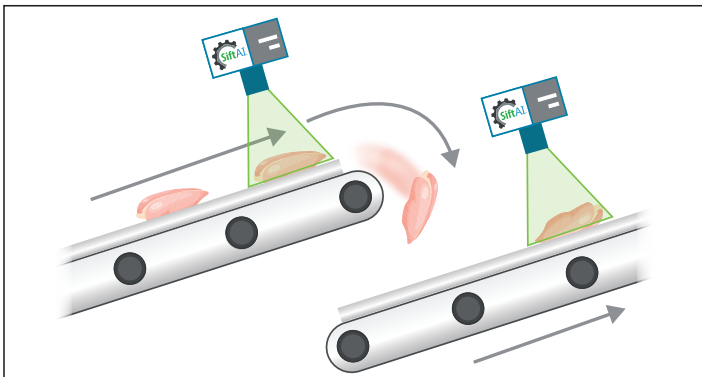
SiftAI® FM HD is engineered for fast, low-disruption installation. The system mounts above your existing conveyor line, so your process stays exactly as it is today. Key installation advantages include:

- **Small footprint:** The compact design fits into space-constrained production areas without displacing existing equipment.
- **No line reconfiguration:** There is rarely a need to cut into the conveyor, relocate machinery, or change your process flow.

Modular camera design: Camera systems adapt to most common belt widths, so the system fits your line rather than forcing your line to fit the system.

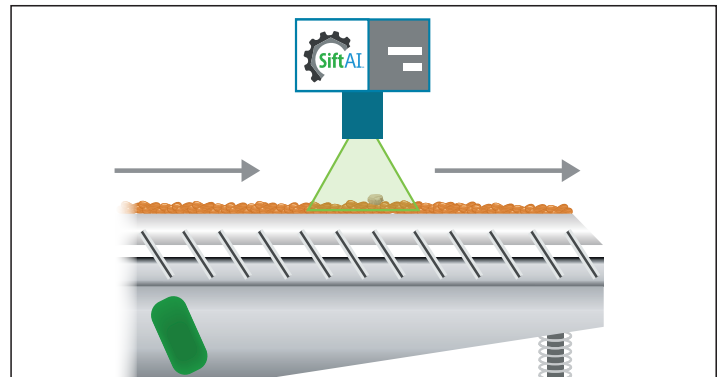
OTHER TYPICAL INSTALLATIONS

All SiftAI® FM HD installations are customized to the needs of the operation. Some of the more common examples include:



Waterfall Analysis

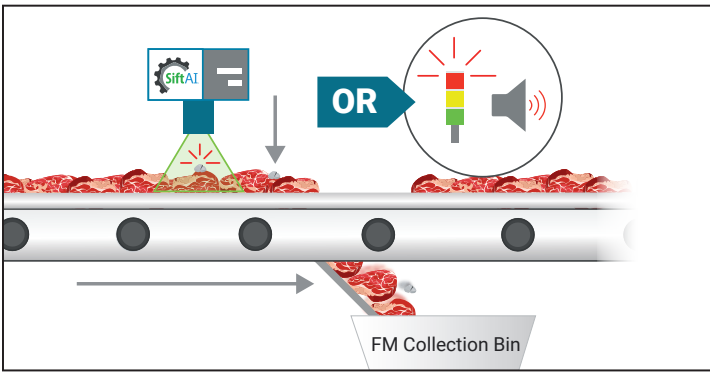
Allows for inspection of both the top and bottom of products while minimizing footprint on the line.



Shaker Table Analysis

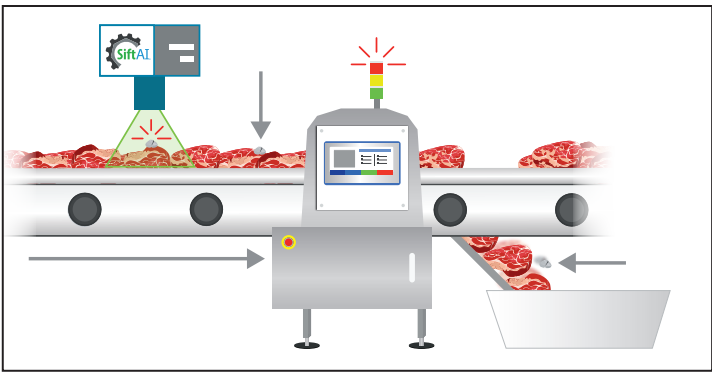
Top-down inspection allows for accurate inspection of free-flowing materials.

REJECTION OPTIONS



Dedicated Rejection Mechanism Alongside the SiftAI FM HD

A simple slide or conveyor drop point automatically triggered by SiftAI FM HD detection. For installations where FM is less of an occurrence, a simple light or alarm can also trigger for manual removal of the FM.



Sharing Rejection with In-Line Metal Detection or X-Ray

Installed before metal detector or X-ray, the SiftAI FM HD aids in detecting materials commonly missed by those systems.

INSTALLATION CONSIDERATIONS

The SiftAI® FM HD System can be mounted over production lines requiring detection of foreign material (FM) and product defects.

- **System footprint:** Dependent on the width of install location.

Belt Width	Approximate Vision Enclosure Width
305 mm (12 in) belt	413 mm (16.25 in) wide
610-762 mm (24-30 in) belt	870 mm (34.25 in) wide
1219 mm (48 in) belt	1327 mm (52.25 in) wide

Installation height: The SiftAI® camera enclosure should be mounted approximately 508 mm to 660 mm (20 in to 26 in) above the inspection surface dependent upon product depth and desired detection performance.

Note: An overhead clearance of 127 mm (5 in) or greater than the system’s total width is required for proper maintenance access and operation.

SPECIFICATIONS

Dimensions	Customizable depending on belt width
Operating Temperature	Between 0-25° C (32-77° F)
Acceptable Sanitation Chemicals	EnviroKlor Plus, Acidiquat 4, Redi-Solve B, One Step Alkali, Decon-7, and more
Power Requirements	120V or 240V
Network Connection	Ethernet; minimum internet connection speed of 50 Mbps
IP Rating	IP69K