

SiftAI® Robotic Sorter

FULLY AUTOMATED POTATO SIZING AND GRADING



Redistribute Labor & Enhance Potato Grading Accuracy with Artificial Intelligence

OVERVIEW

The SiftAI® Robotic Sorter is a potato processor's solution to boost final product grading and sizing accuracy, speed, and efficiency, while allowing companies to redistribute labor where it's needed most. The SiftAI® Robotic Sorter incorporates cameras that analyze products on a rolling table and applies artificial intelligence (AI) models to validate their visual traits. Based on its findings, the AI technology triggers robotic sorting arms to remove unacceptable products at rates up to 80-100 picks per minute (with two-robot systems).

The SiftAI® Robotic Sorter provides the final touch for potato quality analysis by reviewing all sides of the potato on a rolling table. The SiftAI® Robotic Sorter performs all functions of a human potato grader to assess and remove unwanted products from the processing stream, but removes subjectivity from the decision-making process, leading to fewer mistakes, fewer chargebacks, and significant labor savings.

SIFTAI® ROBOTIC SORTER BENEFITS

- **Labor savings:** Reduce and redistribute labor where needed at your facility.
- **Reduced chargebacks:** Ensure your customers receive potatoes that meet their quality and sizing criteria.
- **Unmatched accuracy:** Removes subjectivity from sorting and grading procedures.
- **Improved throughput:** Allows processors to operate at higher capacities.
- **Superior process control:** Real-time analysis and record keeping aid in business decisions and vetting of suppliers.



SIFTAI® ROBOTIC SORTER FEATURES

- Discard unacceptable potatoes at rates up to 80-100 picks per minute (with two-robot configurations).
- Programmed with robust AI models to automatically classify products for user-defined traits.
- Robust, intuitive software.
- Manufactured and supported in the USA. 



CUSTOM CONFIGURATIONS

The SiftAI® Robotic Sorter is available in multiple configurations with the ability to scale based on your operation's changing needs.

	IX 3 Robot	Quattro Robot
Maximum Belt Width Coverage	Up to 24 in.	Up to 36 in.
# of SiftAI® Cameras Needed	One Camera: Belt width up to 18 in. Two Cameras: Belt width 18-36 in.	
Picks per Robot	One-Robot Systems: 40-60 picks per minute Two-Robot Systems: 80-100 picks per minute	

PROVEN AI MODELS TO ENSURE SYSTEM PERFORMANCE

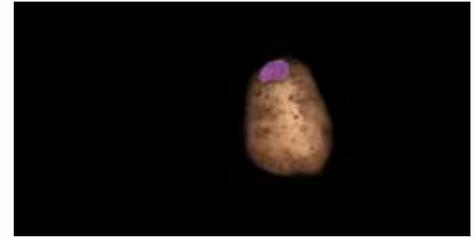
Each SiftAI® Robotic Sorter is equipped with AI models to detect specific defects and features of products passing through a conveyor system. Over time, the system “learns” to focus on products on the conveyor and detect visible defects across the entire product, while also applying AI models to determine whether the product meets the specified size. Each user can adjust defect and size tolerances instantly from the SiftAI® Robotic Sorter Software.



Raw image of product on the conveyor.



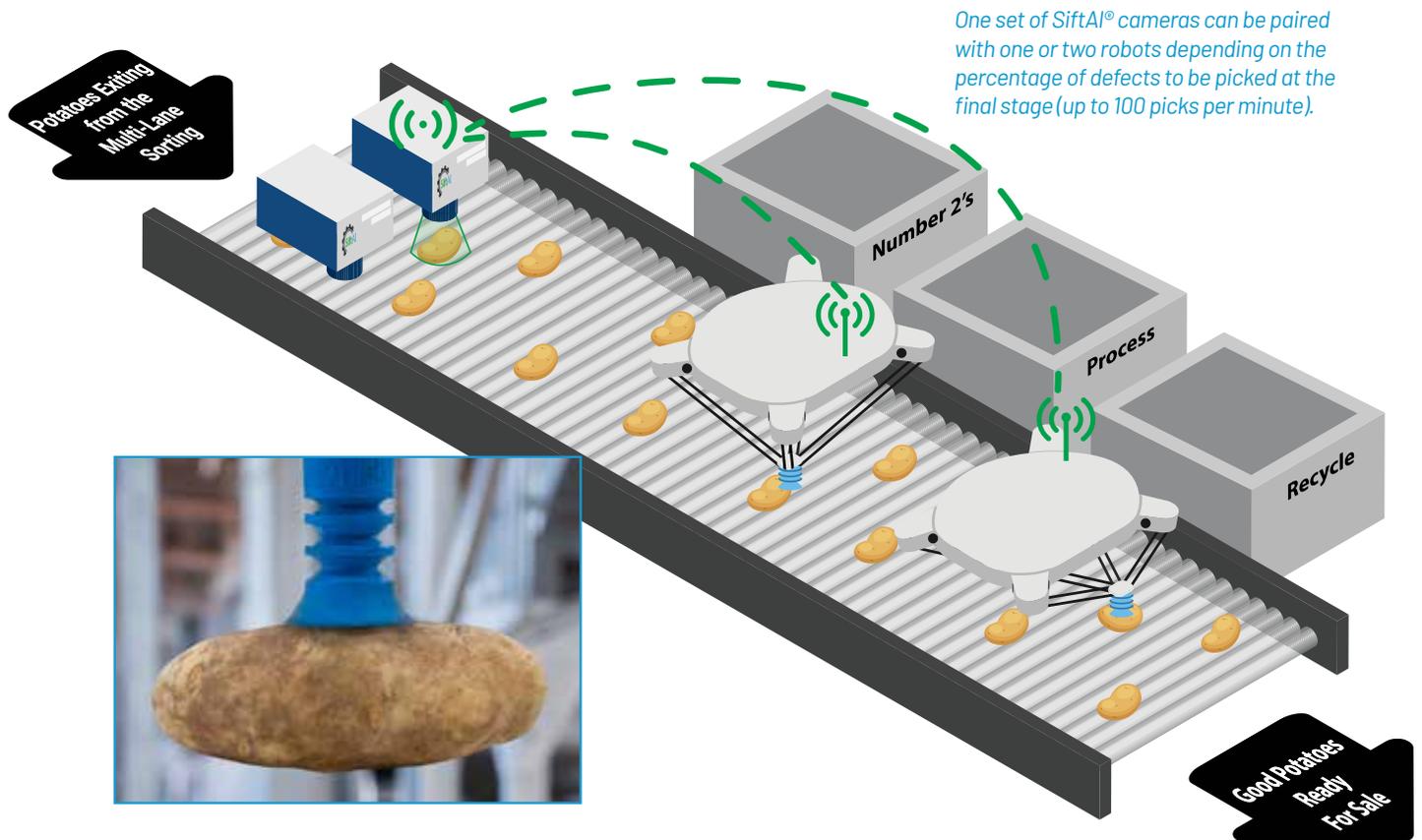
AI segmentation.



AI segmentation with defect detected.

HOW THE SIFTAI® ROBOTIC SORTER WORKS

The SiftAI® Robotic Sorter is a first-of-its-kind potato grader that combines an AI-based vision inspection system with a delta robot. Each system is programmed with AI models for overall potato size and shape or presence of defects like bruises, cracks, %green, and other cosmetic features. Should any potato fall outside of the AI model’s acceptance criteria, the system triggers the robotic arm to pick up and remove the potato from the process stream.



COMMON ANALYZED DEFECTS WITH THE SIFTAI® ROBOTIC SORTER:

Russet Potato Defects

- Dry rot
- Scab
- Old bruise
- New bruise
- Green
- Misshapen (pear, banana, heart, knob)
- Rodent damage

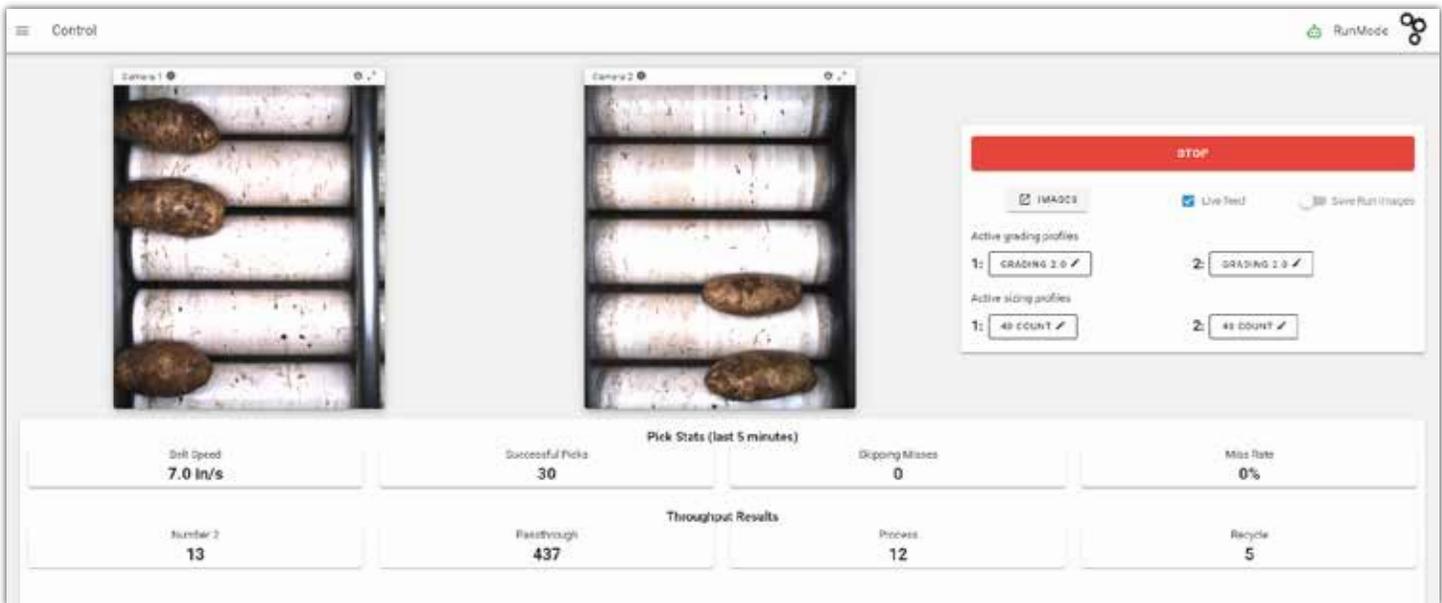
- Pressure bruise
- Rhizoc
- Skinning/rub
- Air checks
- Lenticil (enlarged)
- Sprouts
- Nematode
- Cut/broken

Varietal Defects

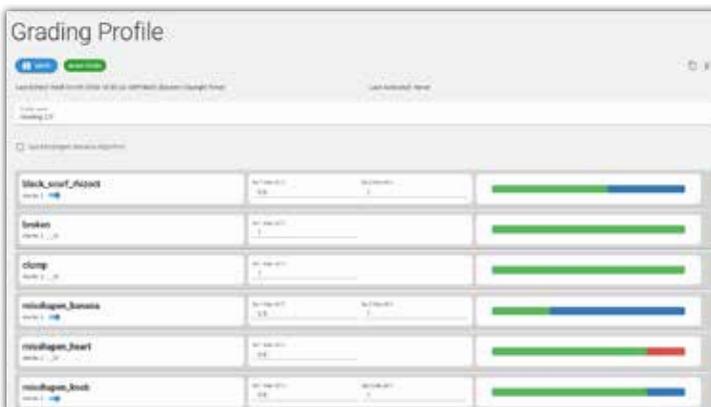
- Green
- Misshapen
- Old bruise
- New bruise
- Lenticil
- Rot
- Dry rot
- Pressure bruise

INTUITIVE, POWERFUL SOFTWARE

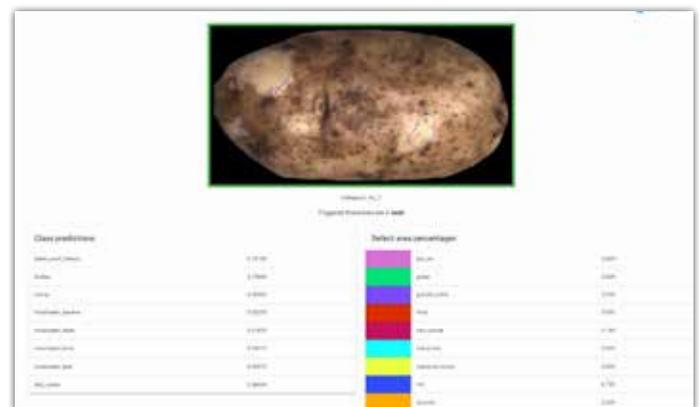
SiftAI® Robotic Sorter systems are paired with powerful software to continuously monitor your production process and provide data for operations and reporting. The user interface is intuitive, and operators can monitor production lines in real time and provide analysis or health check reports.



Users can see a live feed summarizing the performance of each robotic system.



Adjust defect or product size tolerances of the AI model on-the-fly.



Analyze rejected products down to their finest detail.



ONLINE SUPPORT

The Software as a Service (SaaS) is a yearly subscription service that includes regular software updates and AI model augmentation, providing you with the most up-to-date technology for high accuracy and precision. KPM Analytics can access the system to send updates and allow 24/7 support should any issues arise.

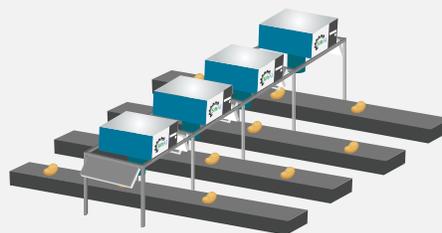
COMPLETE SOLUTIONS FROM ONE SUPPLIER

SiftAI® Robotic Sorter is only one part of a complete line of solutions KPM Analytics offers to potato processors. From pre-sorting to downstream sorting, sizing, and grading, through final product inspection, SiftAI® offers comprehensive and automated quality control that allows processors to achieve higher throughput with superior accuracy and reduced labor.

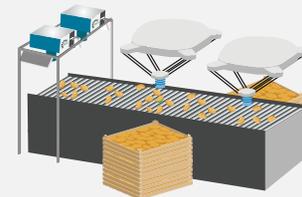
PRE-SORTING → LANE SORTING → FINAL INSPECTION



SiftAI® Smart Table®



SiftAI® Multi-Lane Sorting



SiftAI® Robotic Sorter OR
SiftAI® Smart Table®

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