

# **SAMURAI<sup>®</sup>**

**Self-Aware Sorting Robot**

**M**  
**MACHINEX**  
*Experience Results*

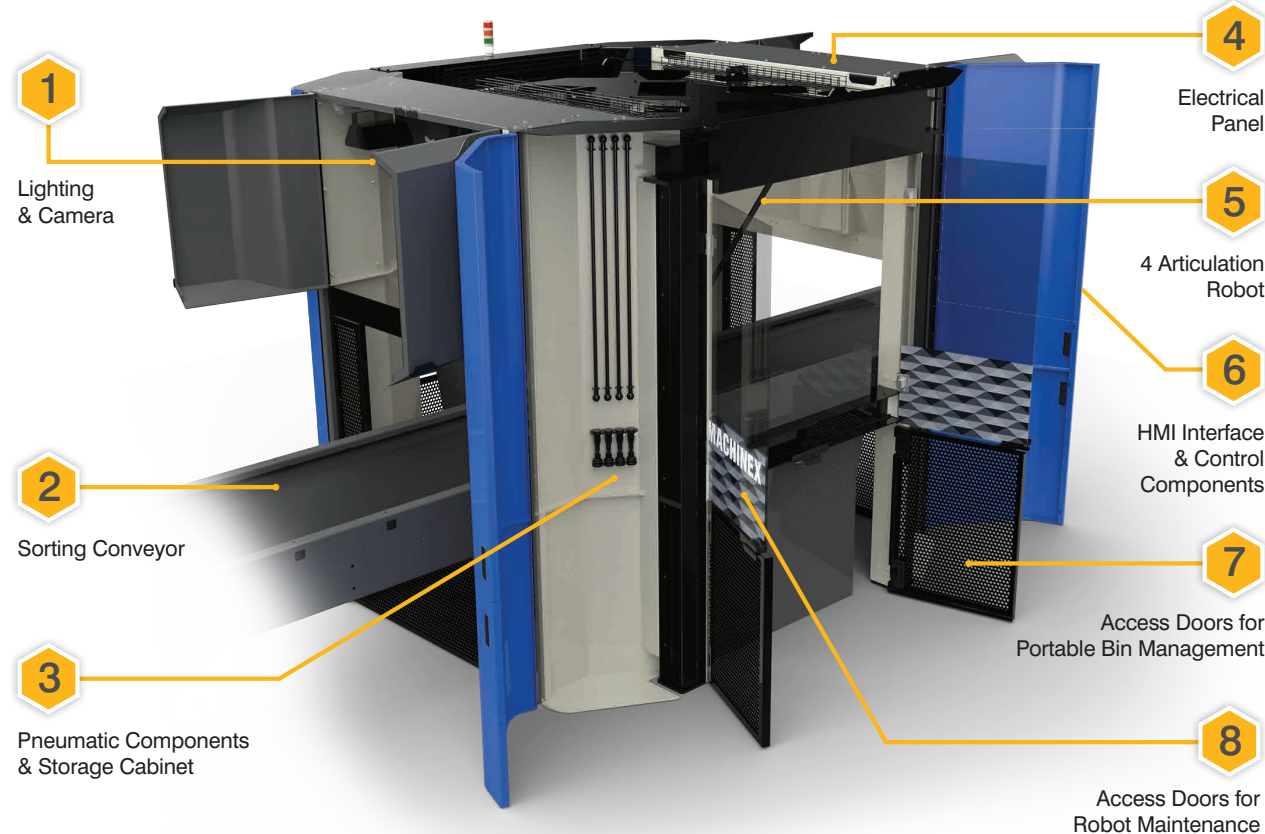


SamurAI<sup>®</sup> is the Machinex adaptive sorting robot that employs superior artificial intelligence technology to identify materials for an accurate, positive product recovery or a precise quality control function. Featuring a unique 4 articulation robot, the SamurAI<sup>®</sup> is a perfect solution to reduce the dependence on manual sorting within your recovery facility.

## **BENEFITS VS MANUAL SORTER**

- ▶ Reduced labor, managing costs & HR challenges
- ▶ Up to 70 picks per minute<sup>1</sup>, nearly double the average pick rate (30-40 picks per minute) of a human sorter
- ▶ Up to 95% efficiency of targeted product recognition<sup>1</sup>
- ▶ Ongoing evolution & optimization of the AI material recognition
- ▶ Increased sorting availability, productivity, performance & safety

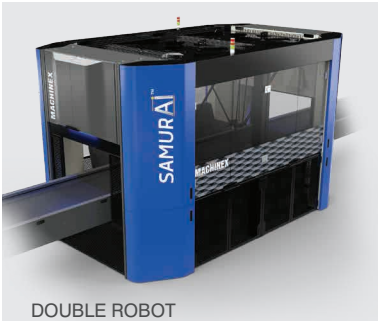
# MAIN COMPONENTS



MODELS					
	Width	Length	Height	Working Envelope	Conveyor Width Possibilities
Samurai® -650	7'0" (2.1 m)	9'7" (2.9 m)	7'11" (2.4 m)	51" (1.3 m)	24" - 36" (0.6 - 1.0 m)
Samurai® -800	8'0" (2.4 m)	10'0" (3.0 m)	8'6" (2.6 m)	63" (1.6 m)	24" - 48" (0.6 - 1.2 m)

## CONSTRUCTION & FEATURES

- ▶ **Adaptive Concept:** Designed for multiple robot configurations and extended conveyor width options
- ▶ **Material handling flexibility:** Recovered products handled through fixed sorting chutes or portable bins
- ▶ **Lighting encapsulation:** For optimal product recognition in all possible sorting environments
- ▶ **Ergonomically designed:** Maximize productivity by easy access for preventative maintenance
- ▶ **Temporary manual sorter replacement:** Safe working environment with easy access inside the machine for a sorter to replace the robot during planned maintenance shutdowns
- ▶ **Customized installation:** Tailored installation into your current sorting process



DOUBLE ROBOT      QUADRUPLE ROBOT

**Shape modularity:** Modular design for multiple robot configuration

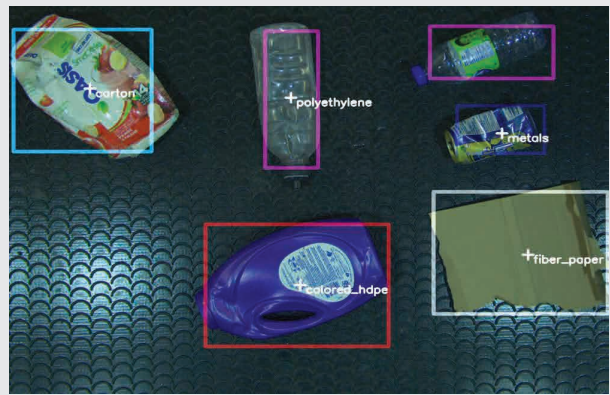
## HARDWARE

- The Samurai® is a 4 articulation robot which:
- ▶ Targets designated products to capture, maneuver and deposit into the respective chutes
  - ▶ Include a unique integrated suction system driven by a blower, enabling the removal of small and light particles (such as plastic film) into a dedicated cyclone and lowering compressed air requirements
  - ▶ Offers a maximum payload of 2.75 lb (1.25 kg)

## ARTIFICIAL INTELLIGENCE

The SamurAI® is powered by an artificial intelligence which:

- ▶ Identifies distinguishing features in the same way as the human eye
- ▶ Recognizes material in dirty, commingled and constantly changing conditions including the introduction of new packaging & designs
- ▶ Continually improves and learns from operating experience to assure maximum recognition efficiency
- ▶ Generates essential data from the material stream composition & evolution perceived
- ▶ Operates according to a pre-determined order of task hierarchy to maximize financial return



## MACH INTELL

- ▶ An essential tool to visually present the performance of the sorting robot for analysis and detailed reports generation



## SORTING APPLICATIONS

SamurAI® sorting applications are numerous and evolve rapidly, however it is designed to:

- ▶ Positively extract recyclable commodities from a specific stream of material (e.g.: plastics, fiber or metals from a reject line)
- ▶ Negatively sort a dedicated stream from all its contamination (e.g.: PET quality control after an optical unit)



# ADDITIONAL ELEMENTS

## SAMURAI® LEARNING STATION

Prior to the integration of the SamurAI®, this station can be installed to:

- ▶ Capture and accumulate several weeks of video material of specific material streams
- ▶ Label and categorize in advance the products seen in the recorded images, thus significantly shortening the learning curve of the robot to assure the best possible recognition and identification performance from day one

## MACH CLOUD

The MACH Cloud annual subscription provides:

- ▶ Automatic AI software updates inclusive of the latest learning done by all SamurAI® robots working around the world
- ▶ An assisted learning mode to teach SamurAI® any specific products present within a material stream, but not recognized by the current AI version
- ▶ Assurance of a maximized recognition performance over the period of the MACH Cloud subscription

# **SAMURAI<sup>®</sup>**

## **EVOLUTION IN SORTING**

TRADITIONAL METHODS, A NEW WAY.

### **SAMURAI CODE OF HONOR**

#### **FAST**

Up to 70 picks per minute<sup>1</sup>

#### **PRECISE**

Up to 95% efficiency of targeted product recognition<sup>1</sup>

#### **RELENTLESS**

Sorting availability, productivity & performance

#### **SELF-AWARE**

Artificial intelligence with continuous learning & optimization

**PROTECT YOUR OPERATION, BUILD YOURSELF A SAMURAI FORCE.**

<sup>1</sup> The SamurAI<sup>®</sup> performances could vary depending upon the variations of tonnage & material composition, the quantity of targeted products, the material spread at the robot, etc.