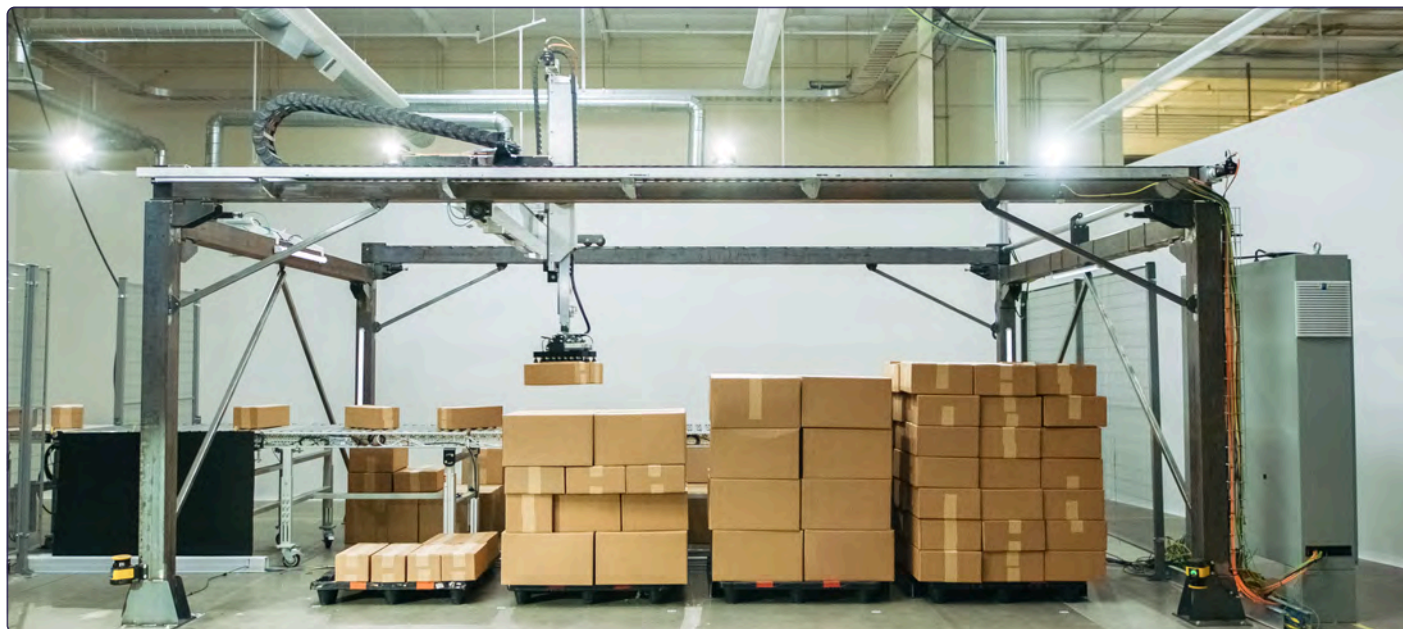# AmbiStack Inbound Palletizing Solution Guide

Automate your inbound palletizing operation for more reliable performance, consistent pallet stacking, and product traceability.

Stack-to-Anything

AmbiStack is a multi-purpose AI-powered robotic stacking system that automates your inbound palletizing operations for more reliable performance, consistent pallet stacking, and product traceability.

One flexible solution. For all the ways you stack.

Sort to many

Sort and stack to 6, 12, or even more pallets with a single machine. More pallets per machine allows for sorting, reduces need for constant pallet removal, and enables fast payback.

Drop in footprint & flexible footprint

Internal conveyor and pallet positions can be adjusted within the overall machine to suit different facility layouts. Rectangular pallet layout matches existing layouts.

Flexible outputs

Sort to anything from a tall roller cart with 4 walls to stacking items directly on the floor.

High rate stacking

Optimized motion planning allows the machine to exceed manual palletizing rates. When building pallets of the same case size, the machine will make use of dynamic multi picking to pick up two items in a row and place them as a group.

Built to automate receiving

Custom scan tunnel designs capture scans from incoming goods in addition to item dimensions and even images of incoming cases. All information can be sent to existing warehouse control systems.

How It Works

1. Convey items

Customer supplied conveyance brings items to AmbiStack.

2. Singulate and Scan

Items are separated so they can be scanned and dimensioned in the scan tunnel.
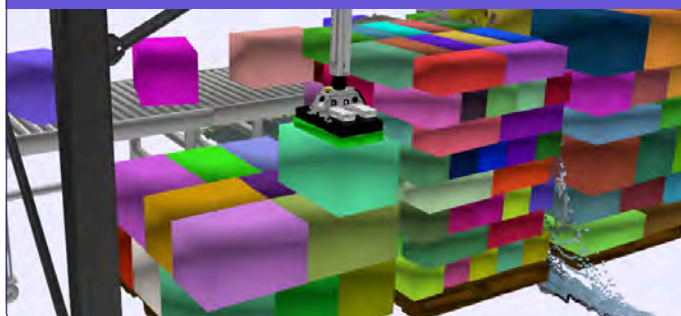
3. Transfer goods via central conveyor

Conveyance transfers goods close to the pallets being actively sorted to optimize palletizing speed.
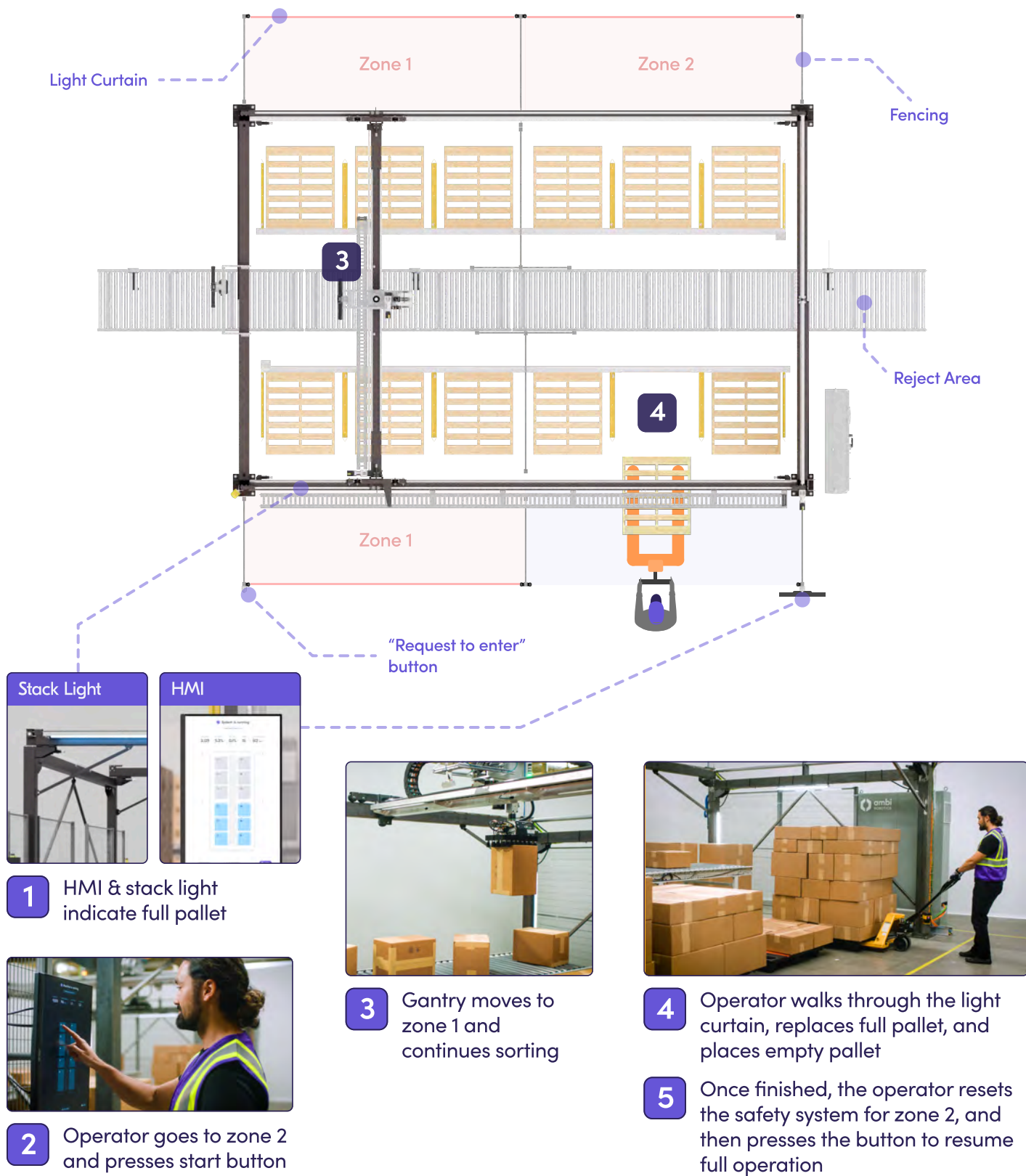
4. Pick and stack

Items are picked with a suction based gripper and are directly transferred to the correct pallet respecting constraints such as barcodes facing out.

5. Verify

Machine vision ensures that all items are densely stacked in the correct position and that pallet integrity is maintained.
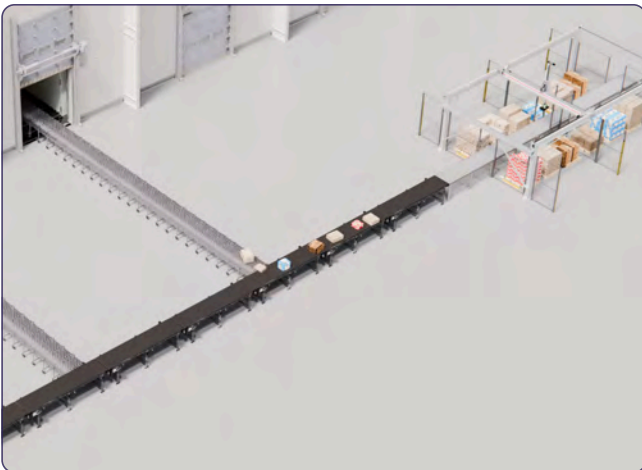
Operator Interaction

Light Curtain

Zone 1   Zone 2

Fencing

3

4

Reject Area

Zone 1

"Request to enter" button

Stack Light	HMI

1 HMI & stack light indicate full pallet

2 Operator goes to zone 2 and presses start button to "request to enter"

3 Gantry moves to zone 1 and continues sorting

4 Operator walks through the light curtain, replaces full pallet, and places empty pallet

5 Once finished, the operator resets the safety system for zone 2, and then presses the button to resume full operation

All-in-one solution

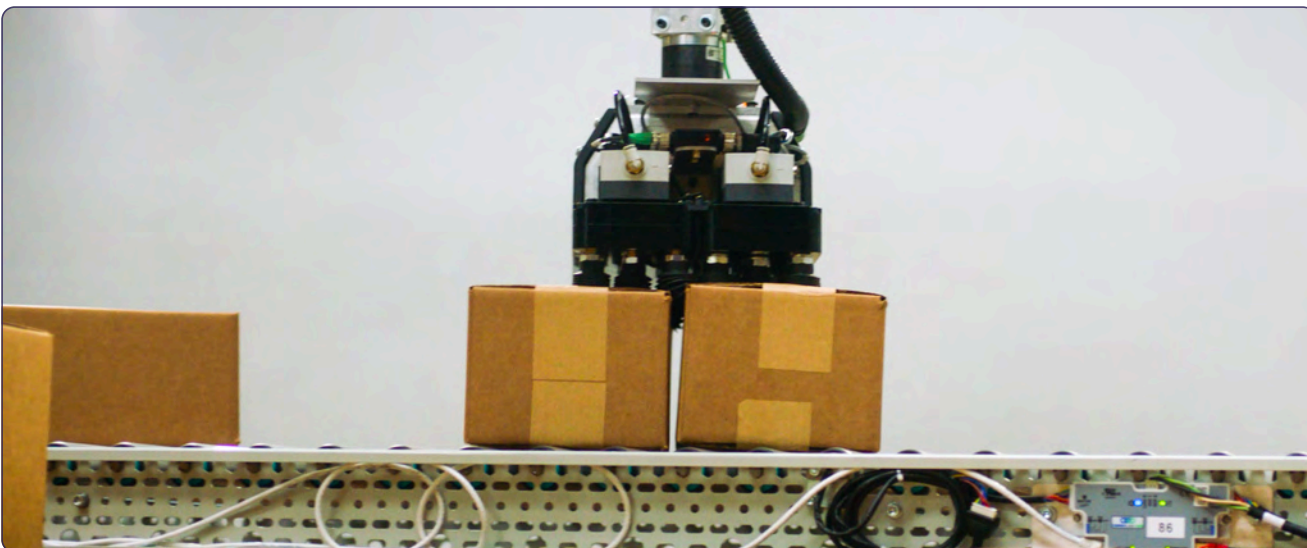**1** Flexible integration to suit your existing layout

Use powered flex conveyance to easily connect AmbiStack to one or many dock doors.

Connect AmbiStack to existing conveyance used to transfer goods from trailer unload. The AmbiStack solution takes over right before the optional scan tunnel.
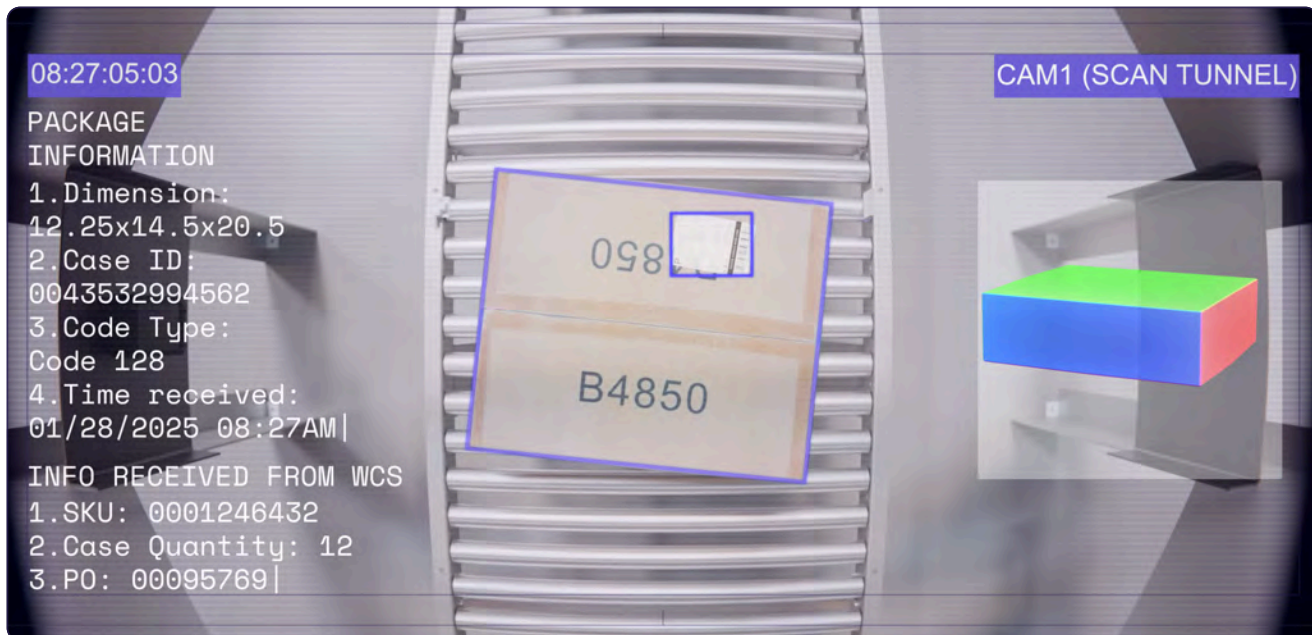
2 Multipick to maximize palletizing rates

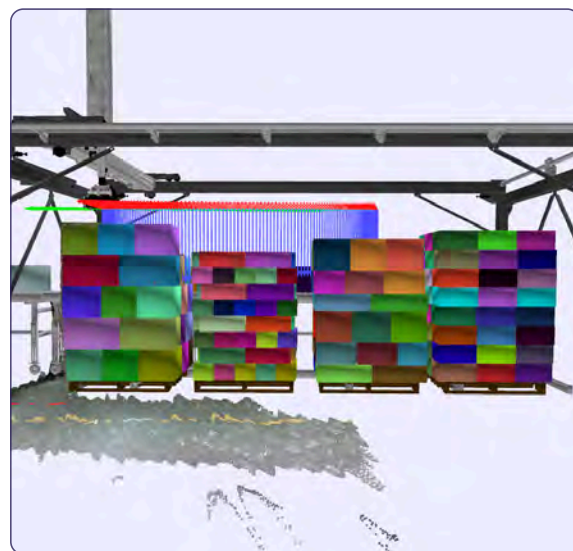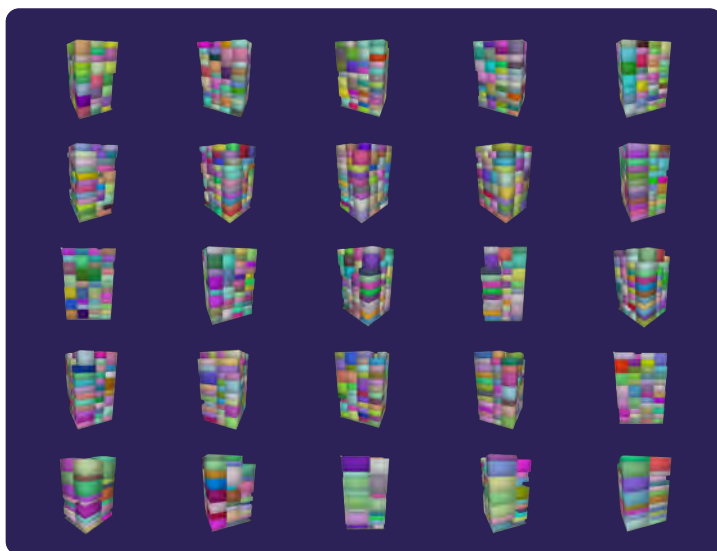AmbiStack will automatically pick and place items as a group of two based on product weights and dimensions.

3 Product scanning for automated receiving

Custom scan tunnel solutions not only capture barcode information, but also capture item dimensions and images of the incoming product. Through integration with customer warehouse control systems, AmbiStack can make available all product information needed to receive goods.

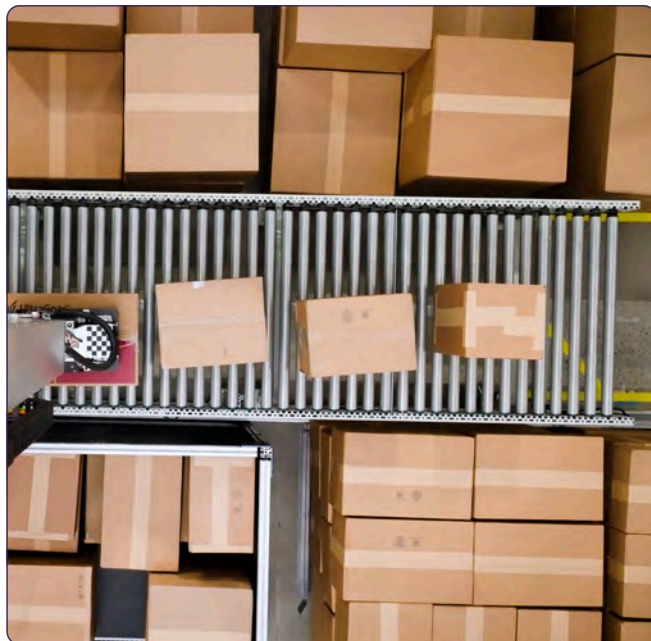**4** Pallet stacking patterns to consistently stack goods

AI powered stacking algorithms allow for new goods or goods without defined patterns to be stacked automatically in stable patterns that meet customer defined maximum pallet heights and overhangs.

When pallet stacking patterns need to be controlled, AmbiStack can use customer defined stacking patterns from an item master to stack goods.

5 Sort plans to sort out goods

Dynamic sort plan
Open pallet positions are automatically allocated to the received product.

Customer defined sort plan
Use the touch screen interface to set sort plans that sort goods to specific locations.

6 Stack continuously with independent safety zones

Light curtain guarded safety zones allow operators to remove and replenish pallet positions in one half of the machine, while the gantry continues to stack in the other.

Now That You Know AmbiStack
Get To Know Ambi Robotics

Ambi Robotics combines hardware and software for automated sorting and stacking solutions. Powered by AmbiOS and Sim2Real AI, solutions seamlessly integrate modular components to power unique configurations. Optimize warehouse efficiency and safety in high-speed supply chain operations operations and start unlocking new levels of robotic dexterity.

Are you ready to handle more?

Configure your AmbiStack today →