

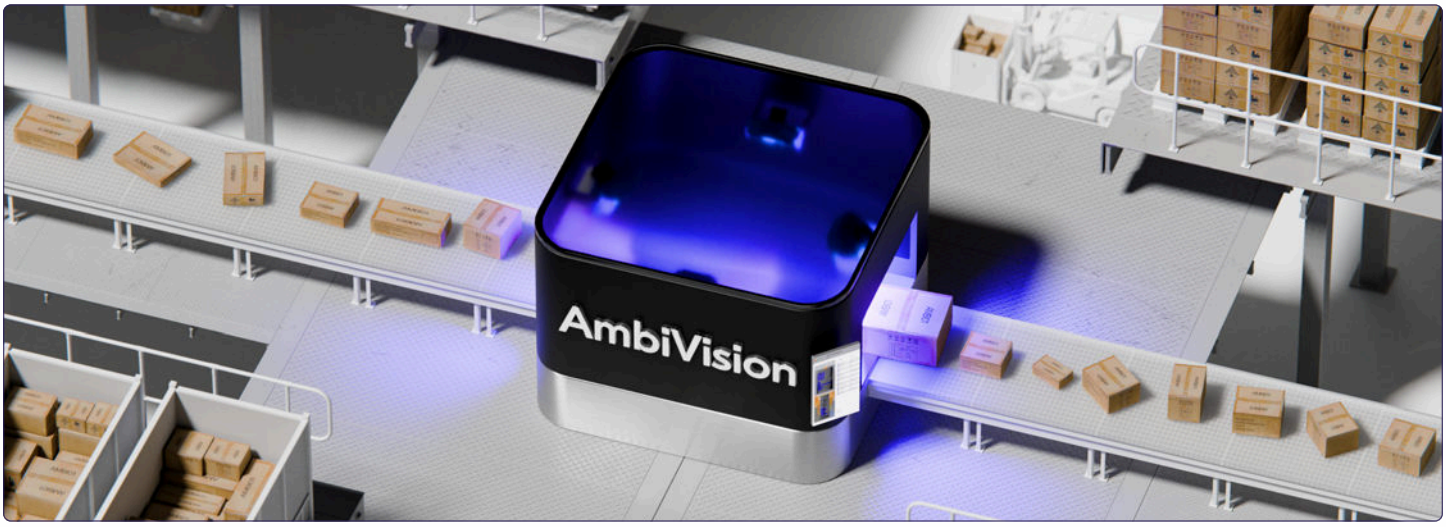
AmbiVision Scan Tunnel Solution Guide

Off-price retailers, healthcare distributors, and apparel supply chains frequently receive cases with information that has to be manually processed because of inconsistent barcodes, labeling, formats and field names. AmbiVision automates this process by instantly reading data off cases, that up until now, couldn't be machine-read.

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Beyond the Barcode

Barcodes work when every supplier follows the same labeling standard. Most don't. Off-price and discount retailers, healthcare distributors, and multi-vendor apparel supply chains routinely receive cases with no consistent barcode, format, or field naming, which has meant someone reading and keying in that information by hand. AmbiVision reads it instead, on goods that were never built to be machine-read in the first place.



One system. Built to see everything.

Read what's actually on the box, not a fixed template

Recent advances in image-based AI let AmbiVision search a case the way a person reads it, matching meaning instead of a rigid template. A field like a PO number, written as PO, P.O., PO #, or Purchase Order, is solvable without new configuration for every supplier or every new format that shows up on the dock.

Barcode reading and OCR in parallel

AmbiVision scans for barcodes and reads text at the same time on every case. Some fields come from the barcode, others from OCR, combined into a single, complete record. One system, one pass, no fallback logic required.

Fast enough for full-line receiving

More than 100 TFLOPS of onboard compute processes dozens of images per item and returns a result within 6 seconds of the item leaving the tunnel. Standardized, label-only use cases return in about 2 seconds.

Resolves conflicting information

Cases carry a lot of text that isn't relevant, manufacturer names, handling instructions, graphics, alongside the field you actually need. When the box says one thing and the label says another, AmbiVision cross-references OCR results against a customer-provided reference file and flags the right answer, automatically.

Sees more than text

Damage, open flaps, crushed cases, hazard labels, overweight packages: AmbiVision identifies visual conditions on every item, not just what's printed on it, and ties every finding back to that specific package.

How it works.

1. Convey items



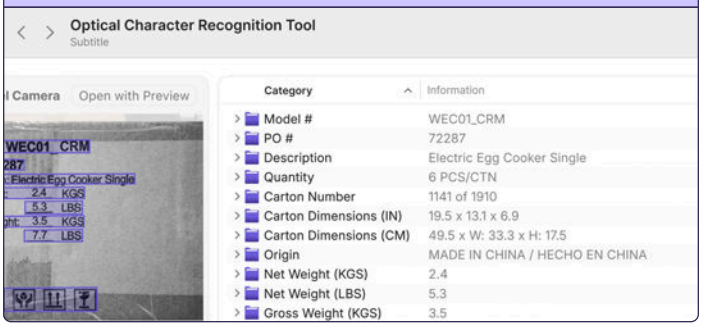
Customer-supplied conveyance brings cases or packages into the AmbiVision tunnel.

2. Capture from every angle



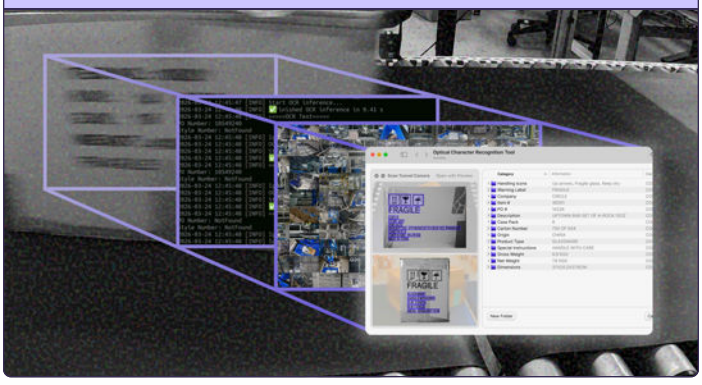
Cameras positioned around the tunnel capture dozens of images per item, covering every side where text, labels, or damage could appear.

3. Extract & classify



Vision models locate text and labels, then route multiple images of each label to a heavier OCR model for cross-verification, improving read rates and accuracy.

4. Cross-reference & verify



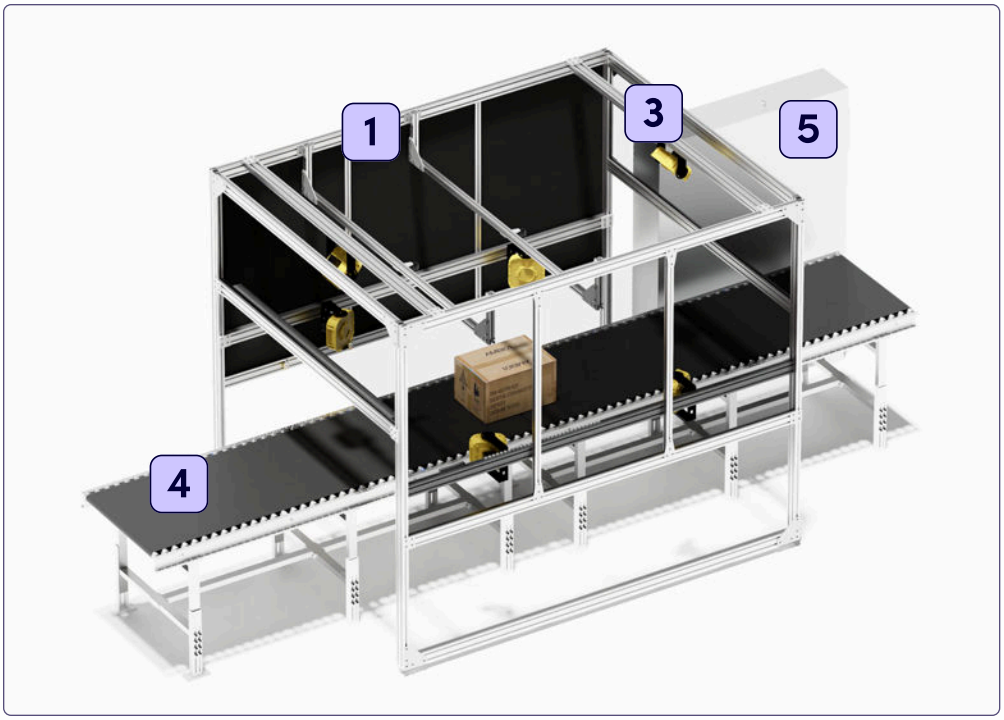
Extracted data can optionally be checked against a customer reference file to resolve conflicts and confirm accuracy before anything is passed downstream.

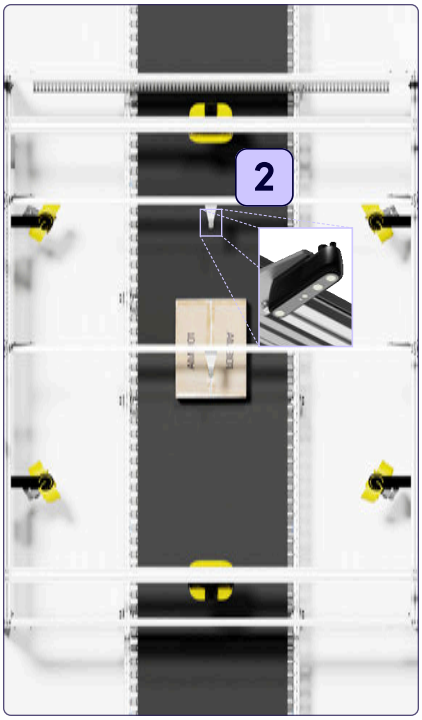
5. Deliver to WMS



Verified data, including any damage or hazard flags, is piped directly to the customer's WMS or other automation for a fully automated receiving or sortation decision.

Hardware Components





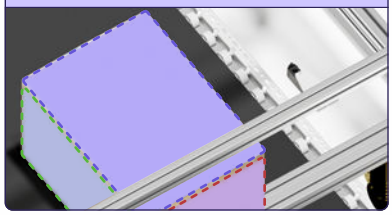
*AmbiVision is available as a scan tunnel built from modular hardware components, configured to your specific use case.

1. Frame



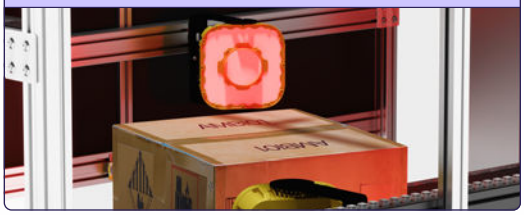
Holds every scanner and camera in place. Side panels block ambient facility light from interfering with reads, and contain scanner light so it doesn't distract nearby operators.

2. Dimensioning Camera



Captures item dimensions on every unit. Standard on every AmbiVision install.

3. Image-based barcode scanners



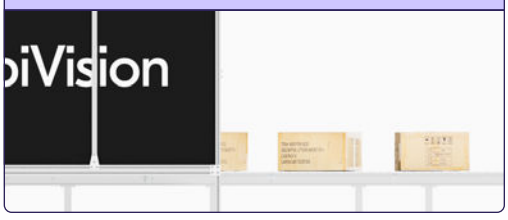
Every case is scanned for barcodes and analyzed with OCR at the same time, combining both into a single read.

4. Conveyance (optional)



Supplied by the customer, an integrator, or Ambi Robotics, depending on the install.

5. Onsite compute

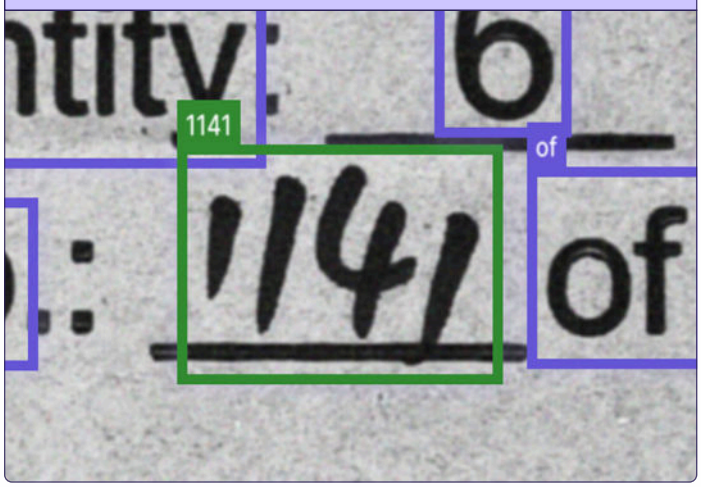


OCR runs locally in the tunnel. Results are sent straight to the customer's WMS or sortation system, no round trip to the cloud required.

AmbiVision Capabilities

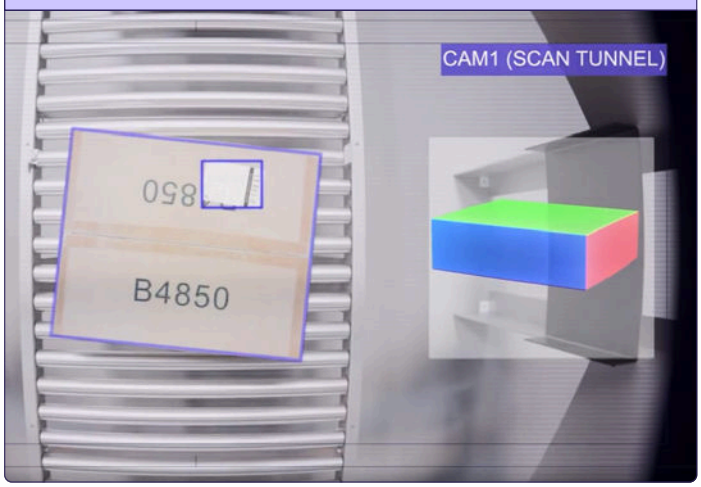
AmbiVision is built to take on more of the manual receiving process over time. Capabilities include:

OCR



- Cognitive OCR extracts text and contextualizes in real-time. A purchase order number can be found from a table or in-line text even if the text is labeled as PO, PO#, purchase order, etc.

Dimensioning



- Camera based dimensioning finds precise dimensions, and has the ability to dimension oddly shaped items like bags or mailers.

Item Segmentation



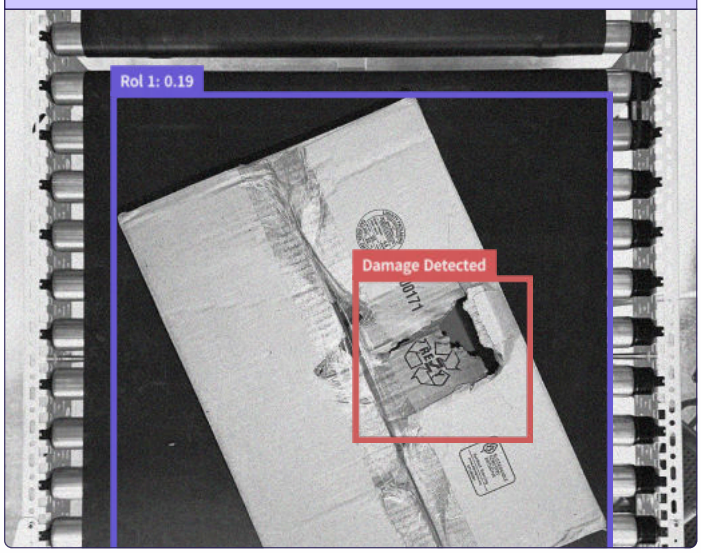
- Image based segmentation finds each unique item in the scene. This technology can automatically detect items received side by side, or even dimension and associate other characteristics with individual items in "bulk flow" use cases.

Classification



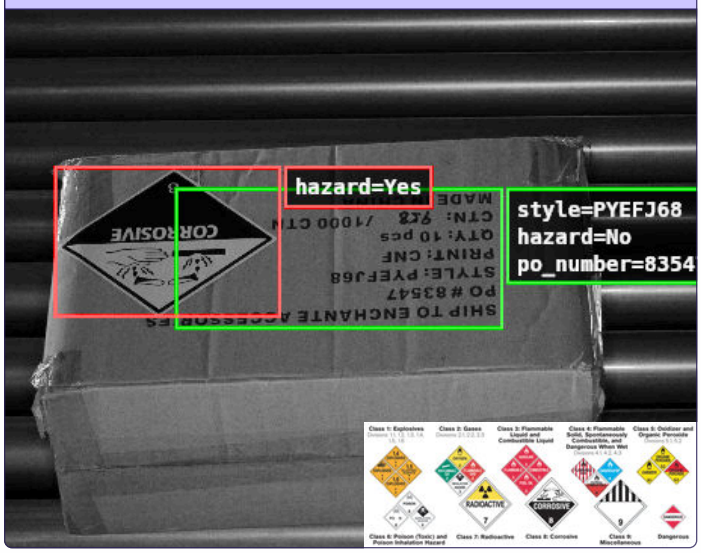
- Classification capabilities determine what type of item is being received. Typical classes are boxes, bags, mailers, unboxed items, and irregular items.

Damage Detection



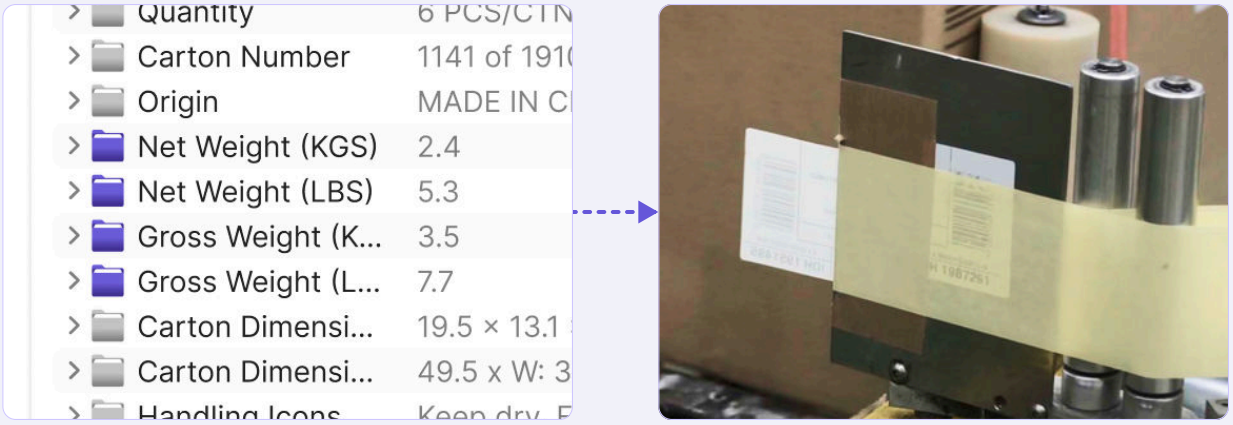
- Find and flag visible damage for manual case audits in real-time. Historical damage detection data is accessible in a web based analytics platform.

Hazard Detection



- Hazard detection finds and classifies hazard labels. Classification determines the exact class and division of the label.

Product Weighing & Print and Apply



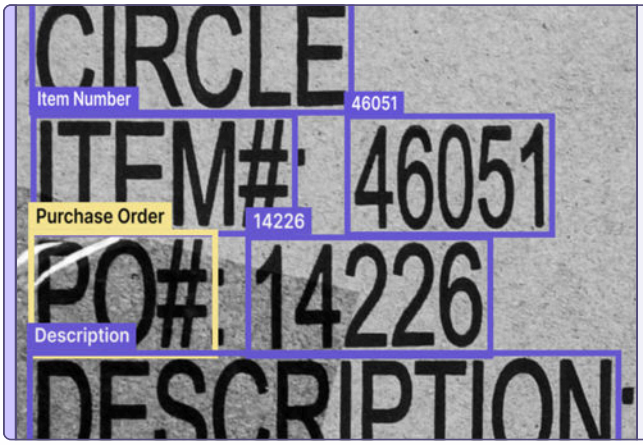
- Add conveyance based scale system to capture case weight, adding another quality check on received items. Print and apply systems can be integrated to label goods as they exit the tunnel.

Built for Full-Case Detail

Cases of goods arrive at the facility and are fed one by one, giving AmbiVision a complete view around the entire item. Key fields are pulled automatically so the case can be received without a person opening it up and reading it by hand, work that's manual today for any supplier that isn't held to a strict barcode standard.

Off-price and discount retail, healthcare distribution, and multi-vendor apparel and footwear supply chains all receive cases where the label, the format, and even the field names change supplier to supplier. AmbiVision is built for exactly that variation.

Challenges it solves



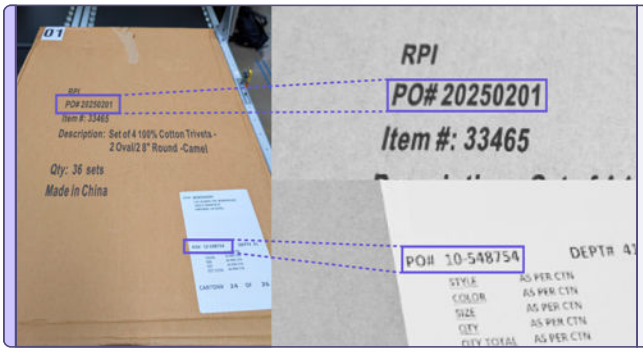
Text size, font and format variation

Advanced models pull the right information from context instead of a fixed rule set. Competing solutions require customers to define every expected identifier upfront, like "PO number." When a supplier relabels it as "P.O. #," or a new supplier uses its own convention, that rule set breaks. AmbiVision handles the variation inherently, with no configuration required.



Text on every side of the box

Models search all sides of the case for text and labels, then send those regions to a heavier OCR model. With more than 100 TFLOPS of compute, AmbiVision processes the dozens of images captured per box and returns a result within 6 seconds of the item exiting the tunnel.



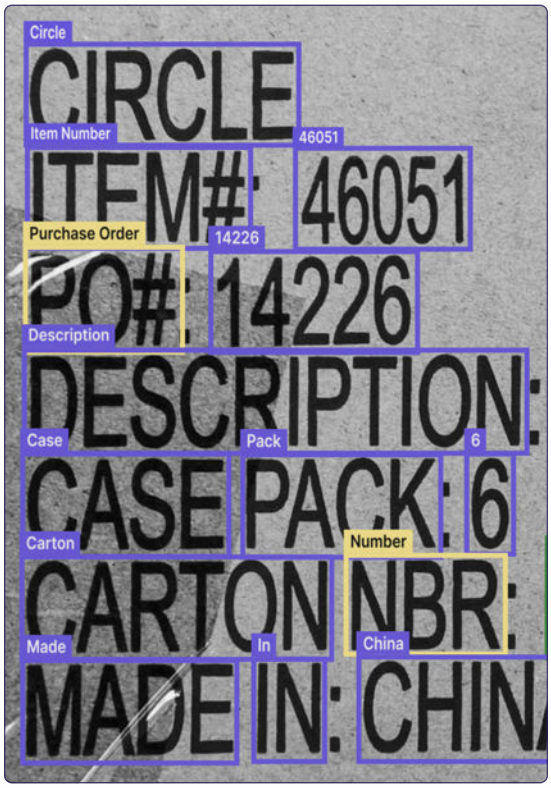
Conflicting information on the box vs. the label

AmbiVision processes everything captured, then cross-references the results against a customer-provided reference to validate which value is correct, automatically.

Now That You Know AmbiVision Get To Know Ambi Robotics

Ambi Robotics combines hardware and software for automated sorting, stacking, and now image-based intelligence. Powered by AmbiOS and Sim2Real AI, our solutions integrate modular components into unique configurations. Optimize warehouse efficiency and product visibility in high-speed supply chain operations, and start unlocking new levels of robotic dexterity.





Are you ready to handle more?

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