

## Customer

A fulfillment center for a large retailer

## Customer Requirements

Reliable item detection on tilt tray sorters

## Banner Solution

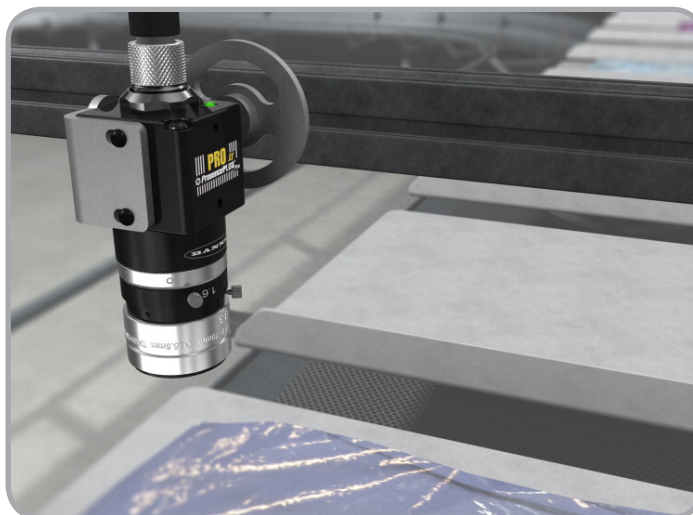
PresencePLUS<sup>®</sup> Pro II series vision sensors

## Why Banner?

**Performance** – Thorough inspection of tilt trays ensures reliable item detection regardless of position, packaging or size

**Ease of Use** – Universal software with three-step, point-and-click setup and the ability to quickly modify and layer programs

## Retailer Reduces Shipping Errors & Delays Using Vision Sensors for Tilt Tray Inspections



*Deployed above the induction station on a sortation system, a PresencePLUS<sup>®</sup> Pro II mini camera inspects each tilt tray for object presence*

## Customer Benefits

**Image Capture** – Controller builds a registry of detected items with position, orientation and other customer determined criteria

**Connectivity** – EtherNet/IP access to internal systems and remote application monitoring and management



*PresencePLUS<sup>®</sup> Pro II mini camera & controller*

## PresencePLUS Pro II Features

- Stores multiple inspection routines with no PC required for access
- Real-time video output for direct connection to a monitor
- ActiveX connectivity to create custom operator control software with object oriented programming

## Learn More

Visit [www.bannerengineering.com](http://www.bannerengineering.com) for product information and to locate a distributor

- [PresencePLUS Pro series overview](#)

## Background

A retailer with a growing business uses a high-speed, high-volume tilt tray sorter to process orders. As the volume and diversity of products being shipped has increased, so have the demands on their sortation system. Misrouted and misidentified products resulted in shipping errors and delays as well as increased expenses and lost productivity.

## Challenges

Retro-reflective photo eyes were used for object detection on the tilt trays. Inside each tray is a strip of retro-reflective tape. Items blocking the tape were detected by the photo eyes. The sorter's management system would then link the items to the tray and route them to the exit chute corresponding to their final destination.

Items shifting position inside the tray away from the tape avoided detection. Clear or reflective packaging often caused the system to misidentify occupied trays as empty. Tape in many trays had lost its reflectivity and had begun to wear away in spots, causing the system to falsely identify empty trays as occupied.

## Solution

PresencePLUS<sup>®</sup> Pro II mini cameras deployed over the induction stations of the sortation system inspect all trays entering the system. The compact form factor of the mini cameras and flexible mounting options simplified installation, allowing the company to avoid alterations to the existing infrastructure and minimize downtime.

Each camera is paired with a PresencePLUS Pro II controller. The controllers have a full suite of location, inspection, analysis and geometric tools which can be used simultaneously. Using the Blob and Edge tools, each tray is compared against an image of an empty tray, ensuring reliable object detection regardless of position, packaging, color or size. When items are detected, a discrete output is sent to the controller, linking the items to the tray and recording their position and orientation.