



LaneHawk™ LH4000



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1. Introduction

In the average retail store, about \$10 worth of merchandise per lane per day on the bottom of shopping baskets goes unpaid for through the checkout lanes. As unpaid merchandise or ‘shrink’, this leaves retailers with losses that mount up over time, directly impacting front-end sales by about 0.1%. Discovering this merchandise before it leaves the checkout stand by using the LaneHawk™ LH4000 BOB (bottom-of-basket) unit will help to recover 85–90% of these losses, which, for the average store, can be up to \$20,000 a year!

The LaneHawk™ LH4000 unit uses cutting edge vision technology to reduce shrink at the front-end in real-time. Using a lighting and camera unit at each checkstand, the system has the power to recognize products based on their packaging and alert the cashier of potential losses as they happen. Combined with the logging capabilities of the back-office server, the LaneHawk solution is able to histogram losses and identifies poor cashier scanning habits.

The LH4000 unit is the latest lighting and camera unit developed to have an improved field of view, less obtrusive lighting and better sealing. It also boasts a higher resolution imager, power over Ethernet capabilities, and a better updating mechanism to ensure customers have the latest software available.

2. Positioning Statements

2.1. Family Positioning

The LaneHawk LH4000 unit is a direct replacement for the Gen 3 and Gen 3.5 cameras. It uses the same core ViPR™ software with vast improvements to the electrical hardware and overall form factor. With the addition of a few spacer add-ons, the LaneHawk LH4000 unit is backwards compatible with existing Gen 3 and 3.5 cutout holes.

2.2. Product Positioning

The new LaneHawk LH4000 unit has the following main targets:

- Attract new customers with a lower price point, improving retailers’ ROI
- Ease of installation process with improved form factor



3. General Description

3.1. Product Overview

The LaneHawk LH4000 unit is a bottom-of-basket (BOB) loss prevention tool that can identify items without seeing a bar code. The alerts come to the cashier in real-time, immediately affecting the retailer's bottom line. Equipped with logging capabilities, the LaneHawk solution can produce weekly reports of missed BOB items and identify poor cashier behavior. The product requires a minimal amount of training and POS integration.

3.2. ViPR™

An acronym for Visual Pattern Recognition, ViPR is the software engine that runs the LaneHawk LH4000 solution. First, a database of high resolution images (called a modelset) is created containing the product packaging of common BOB items. This modelset must be updated and maintained by Datalogic. ViPR extracts key points (feature points) from these images that create a unique pattern for each UPC.

When a product passes in front of the LaneHawk LH4000 unit, an image is captured of the product and the ViPR software extracts feature points from that image. The ViPR software then matches this pattern of feature points to the patterns located in the modelset which identifies the product. These computations are streamlined to produce results in a fraction of a second, which allows the recognition to happen in real-time.

3.3. Installation

Unless the checkstand is pre-cut, a contract installer will need to measure and alter the checkstand to accommodate the LaneHawk camera at the proper location. Tooling kits and precise cutout templates can be provided by Datalogic.

For every store, a back-office server is required to run the LaneHawk software. This server can be a computer located in the back office or a virtualized machine on the network.

3.4. Mechanical and Environmental Performance

The LH4000 unit is equipped with a tempered glass front that has been tested to withstand a 20 lb. load swinging from 4 feet at 45 degrees. The entire unit will withstand vibration, electrostatic discharges and dust and spill tests that far exceed normal usage without noticeable degradation to performance.



3.5. General and Distinctive Features

Just like the previous generations of the LaneHawk units, the LH4000 unit is, at its core, a camera and a lighting panel. However, the lighting panel has been improved to optimally throw the light to the targeted area (bottom of the basket) to increase product visibility while being less obtrusive to casual observation. Additionally, by folding the optical path with mirrors, the viewable area has increased while decreasing the size of the case.

The camera also boasts a higher 1280 x 1024 resolution imager and an improved focusing method from previous generations.

Other BOB loss solutions, such as training or mirrors, can be easily ignored and do not hold the cashier responsible. The LaneHawk LH4000 solution actively checks each cart bottom and forces the user to acknowledge the detected BOB items before tendering the transaction. Reporting then holds each cashier accountable by logging the images and transaction details for each missed BOB item.

4. Features and Benefits

4.1.Key Features and Customer Benefits

PRODUCT FEATURES	CUSTOMER BENEFITS
Diffused Lighting Panel	Less obtrusive for cashiers and shoppers.
Smaller Form Factor	Easier to install.
Flush Mount Window Frame	Less noticeable when installed.
Power Over Ethernet	Requires fewer wires underneath the checkstand.
Rubber Gasket Sealing Over Connectors	Less likely to damage from spills and debris.
Risk Reports	Able to generate a report of loss items. Histogram to determine if system is being used properly, poor cashier behavior, etc.



5. Sales and Marketing Information

5.1. Product Ad Builders

100 Word Product Copy

The LaneHawk™ LH4000 unit is a front-end loss prevention tool that stops bottom-of-basket (BOB) loss in real-time. Using cutting edge machine vision technology called ViPR (Visual Pattern Recognition), the LaneHawk unit has the ability to recognize items based on their product packaging without seeing the bar code. Once a product is recognized, the LaneHawk unit provides the cashier with the ability to add the UPC directly to the current transaction.

The LaneHawk LH4000 servers are equipped with logging capabilities to allow customers to audit loss history and identify poor cashier behavior. Access to these servers allows the user to remotely monitor status and activity.

50 Word Product Copy

The LaneHawk™ LH4000 unit is a front-end loss prevention tool that stops bottom-of-basket (BOB) loss in real-time. Using cutting edge machine vision technology, the LaneHawk unit has the capability to recognize items based on their product packaging and add their UPC directly to the transaction, all without seeing a bar code.

25 Word Product Copy

The LaneHawk™ LH4000 unit is a front-end loss prevention tool that recognizes product packaging to alert the cashier of potential bottom-of-basket (BOB) losses in real-time.

15 Word Product Copy

The LaneHawk™ LH4000 unit is a loss prevention tool that recuperates bottom-of-basket (BOB) losses in real-time.

5.2. Channel Bullets

Target Audience: (Distributors, Channel or End User)

- **Real-time alerts to the cashier.** Loss items don't go out the door for analysis later; they are caught and paid for in real-time.
- **Recognizes items based on product packaging.** The LaneHawk LH4000 unit can catch items with very few false positives, decreasing cashier frustration with the system.
- **Detailed logging and reporting.** This feature notifies the retailer if the system is working properly or if there is poor cashier behavior in the organization.



- **Network-based camera.** This allows the customer to remotely view and control the servers and cameras easily.
- **Smaller form factor.** This allows the LaneHawk LH4000 unit to be easily installed in a wider variety of checkout stands.

5.3.Elevator Pitches

BOB loss is a bigger problem than most retailers realize. Typical stores lose about \$10 per lane per day in sales through bottom-of-basket losses. The LaneHawk LH4000 unit is the only solution that catches these items and allows cashiers to add it to the transaction in real-time. Using sophisticated machine vision software, the LaneHawk LH4000 unit is able to identify merchandise based solely on their product packaging so that no BOB item leaves the store without being paid for. Other video solutions report losses after the fact and only identify the problem. Adding mirrors or cashier training shows a severe reduction in losses shortly after implementation.

The LaneHawk LH4000 unit comes with a server that logs all images and loss transactions for tighter front-end control. Customers can easily monitor status and identify poor cashier behavior with the reporting tools.

LaneHawk customers typically see a return on investment in less than 12 months. Simply install, then sit back and see your bottom line increase!

Target Audience: Distributors, Channel and End Users

5.4.Email Template Copy

The LaneHawk™ LH4000 unit is a front-end loss prevention tool that stops bottom-of-basket (BOB) loss in real-time. Using cutting edge machine vision technology, it has the capability to recognize items based on their product packaging and add their UPC directly to the transaction, all without seeing a bar code.



6. Warranty and Service Information

6.1. Factory Warranty

The LaneHawk™ LH4000 comes with a 90-day factory warranty.

6.2. Maintenance Agreements

The standard Datalogic ADC 5 day and overnight ease of care plans are available.

6.3. Technical Support

For technical support, please email lh-support@datalogic.com or call your local Datalogic sales representative.

7. How to Order

7.1. Product Configurations

PART NUMBER	DESCRIPTION
LH4000-00-01	Standard LaneHawk unit for U.S./Canada/Mexico/Columbia/Dominican Republic/Costa Rica
LH4000-00-02	Standard LaneHawk unit for Europe/Germany
LH4000-00-03	Standard LaneHawk unit for Brazil
LH4000-00-04	Standard LaneHawk unit for Australia

7.2. Accessories

PART NUMBER	DESCRIPTION
90A052188	Powered USB cable

8. Frequently Asked Questions

Q: Will the LaneHawk LH4000 unit work with my POS?

A: The answer is almost always ‘yes’, though some customization may be required. All implementations to date have utilized a video display.



Q: Do I need to have a server in my store?

A: Yes, but this server can be virtualized or used for other parallel purposes.

Q: Is it complicated to use?

A: We strive to make the LaneHawk LH4000 unit as simple as possible. POS integration forces the cashier to take responsibility ensuring long-term effectiveness. Cashier training typically takes less than 10 minutes. Ethernet connectivity enables remote status checks, updates and reporting. The LaneHawk unit prides itself on a low amount of false positives, keeping cashier frustration very low.

Q: How do I make sure it's working?

A: Administrative tools provide easy remote monitoring and troubleshooting. The LaneHawk LH4000 unit itself has a variety of colored lights indicating status and the POS screen indicates if the LaneHawk unit is connected properly. Reporting provides weekly updates on results.

Q: Since the LaneHawk LH4000 unit recognizes products based on packaging, what happens when the packaging changes?

A: Updates to the image database (modelset) can be sent to the customer on a periodic basis based on the software maintenance contract. Datalogic recommends a frequency of about 6 weeks. The LaneHawk customer base is large enough that we are in 1–2 stores a week looking for packaging changes, so changes to nationally branded items are caught and incorporated very quickly

Q: What if the LaneHawk unit sees an item that is not in the modelset?

A: The customer can turn on the option for 'Generic Item Detection' (GID). This complex algorithm tries to differentiate between items of interest and mundane object (legs, empty carts, etc.) The drawback to enabling GID is that LaneHawk LH4000 unit will report more false positives to the point of sale.

9. Summary

The LaneHawk LH4000 camera represents the next step in hardware for the BOB loss solution with a better form factor and lighting and viewing capabilities. It is a direct replacement for the Gen 3 and Gen 3.5 LaneHawk cameras. The LaneHawk LH4000 unit is the only solution that reliably catches BOB items in real-time, allowing the cashier to add the item directly to the transaction.





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