

# HANDS-FREE BARCODE READING APPLICATIONS GUIDE FOR LOGISTICS

Overhead fixed-mount barcode reading solutions for retail distribution, e-commerce, and parcel processing organizations

# THE GLOBAL LEADER

## IN MACHINE VISION AND INDUSTRIAL BARCODE READING

**Cognex®**, the leading supplier of machine vision and industrial barcode reading solutions.

With over 3.5 million systems installed in facilities around the world and over 41 years of experience, Cognex is focused on industrial machine vision and image-based barcode reading technology. Deployed by the world's top manufacturers, suppliers, and machine builders, Cognex products ensure that manufactured items meet the stringent quality requirements of each industry.

Cognex solutions help customers improve manufacturing quality and performance by eliminating defects, verifying assembly, and tracking information at every stage of the production process. Smarter automation using Cognex vision and barcode reading systems means fewer production errors, which equates to lower manufacturing costs and higher customer satisfaction. With the widest range of solutions and largest network of global vision experts, Cognex is the best choice to help you **Build Your Vision.™**

**\$1.04**  
**BILLION**  
2021 REVENUE

**OVER 41**  
YEARS IN THE BUSINESS

**500+**  
CHANNEL PARTNERS

GLOBAL OFFICES IN  
**20+ COUNTRIES**

**3,500,000+**  
SYSTEMS SHIPPED



# HANDS-FREE BARCODE READING

## COGNEX HANDS-FREE BARCODE READING SOLUTIONS FOR LOGISTICS APPLICATIONS

Online shopping has surged, and customers are expecting quick deliveries. This is putting pressure on retailers and e-commerce platforms to increase their operational efficiency. On top of that, labor shortages have made it harder to find personnel to move packages around and shipping packages in a timely manner depends on maintaining high levels of performance throughout the facility.

Using fixed-mount image-based barcode readers to scan products hands-free and overhead allow associates to keep the package moving while the reader scans the barcodes. However, many companies still rely on handheld laser-based readers, which require the associate to repeatedly put down the package and manually scan the barcodes. Laser-based readers also have difficulty with damaged, skewed, or torn codes, resulting in lower read rates and more manual rework.

Cognex overhead hands-free barcode solutions featuring image-based technology scale operator productivity and increasing throughput and read rates. In addition, Cognex technology features operator feedback to indicate the read zone and read result, as well as ensuring ergonomic safety and fewer touch points.

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# HANDS-FREE BARCODE READING AT THE INBOUND DOCK DOOR

## Read codes on incoming freight to verify what is supposed to be received

### Problem

Receiving incoming goods into a warehouse needs to be efficient and accurate. Poorly printed, scratched, or damaged codes provide challenges for traditional handheld barcode readers. Unreadable codes must be manually processed, which increases cost and decreases efficiency. Tracking a product from when it enters a warehouse to when it leaves is key business requirement for logistics operations. Traditional barcode reading technology has no ability to capture images of bad labels which makes tracing a problem to its source very difficult. Problems not caught at the beginning can cause larger issues downstream.

### Solution

Cognex's image-based overhead hands-free barcode reading solutions, featuring DataMan® fixed-mount barcode readers, offer a hands-free solution to reading codes quickly, efficiently, and accurately. The overhead scanning configuration means operators can read and unload more boxes per minute than if using hand or ring scanners. In addition, hands-free scanning at the incoming dock door ensures distribution or fulfillment facilities receive the correct items, improves inventory management, eliminate costly returns, and improves overall package traceability.



Reduce the time required to unload trucks with overhead hands-free barcode reading

# PICK AND PACK DURING ORDER FULFILLMENT

## Improve pick times and accuracy with overhead image-based barcode reading stations

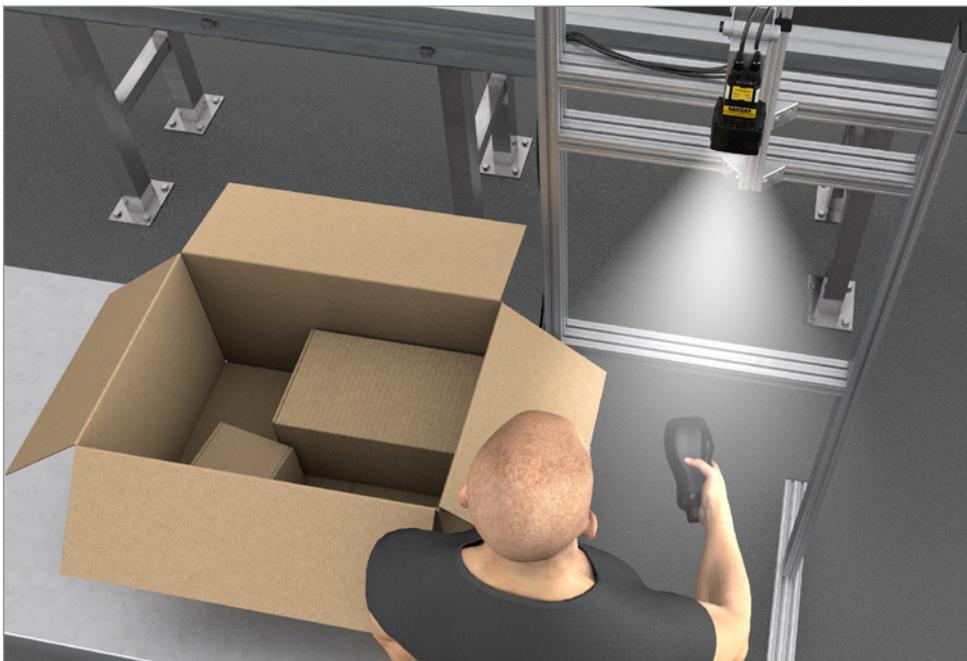
### Problem

Customer demand is increasing at a rapid rate and operations teams are trying to find ways to increase throughput of operators while maintaining processing quality. To meet this increased demand, companies need to ensure that operators can quickly scan items to verify them against the order pick plan while maintaining the speed required to increase throughput.

Several factors create challenges to these processes. Codes, which are located on various sides of items, can be damaged from transport or handling, and operators must attempt several scans before getting a good read. Older technology, such as laser barcode scanners, are often unreliable when it comes to reading damaged codes. Additionally, when using handheld or ring scanners, operators must always have one hand available to aim their device, which takes extra time. Handheld scanning technology is almost inevitably associated with high rates of breakage, loss, or connectivity issues – all of which can be very disruptive.

### Solution

Deploying a hands-free scanning solution using DataMan fixed-mount barcode readers mounted overhead solves these challenges. Cognex barcode readers use image-based scanning technology and industry-leading advanced algorithms and decoding technology to successfully read damaged, smudged, or distorted codes better than any other laser or line scan technology on the market. The overhead scanning configuration allows operators to quickly scan codes from any orientation – upside down, sideways, even extreme angles of up to 85 degrees. Using this method, operators can improve throughput and meet increased demand by processing more orders against the pick plan.



Scan the QR Code to see how hands-free overhead barcode reading increases your pick efficiency as compared to using a hand-held scanner.



[www.cognex.com/videos/barcode-readers/fixed-mount-vs-handheld-barcode-reading-demo](http://www.cognex.com/videos/barcode-readers/fixed-mount-vs-handheld-barcode-reading-demo)

Improve order packing efficiency using overhead hands-free barcode reading stations

# PALLETIZING OUTBOUND SHIPMENTS

## Build pallets faster and increase overall truck loading efficiency

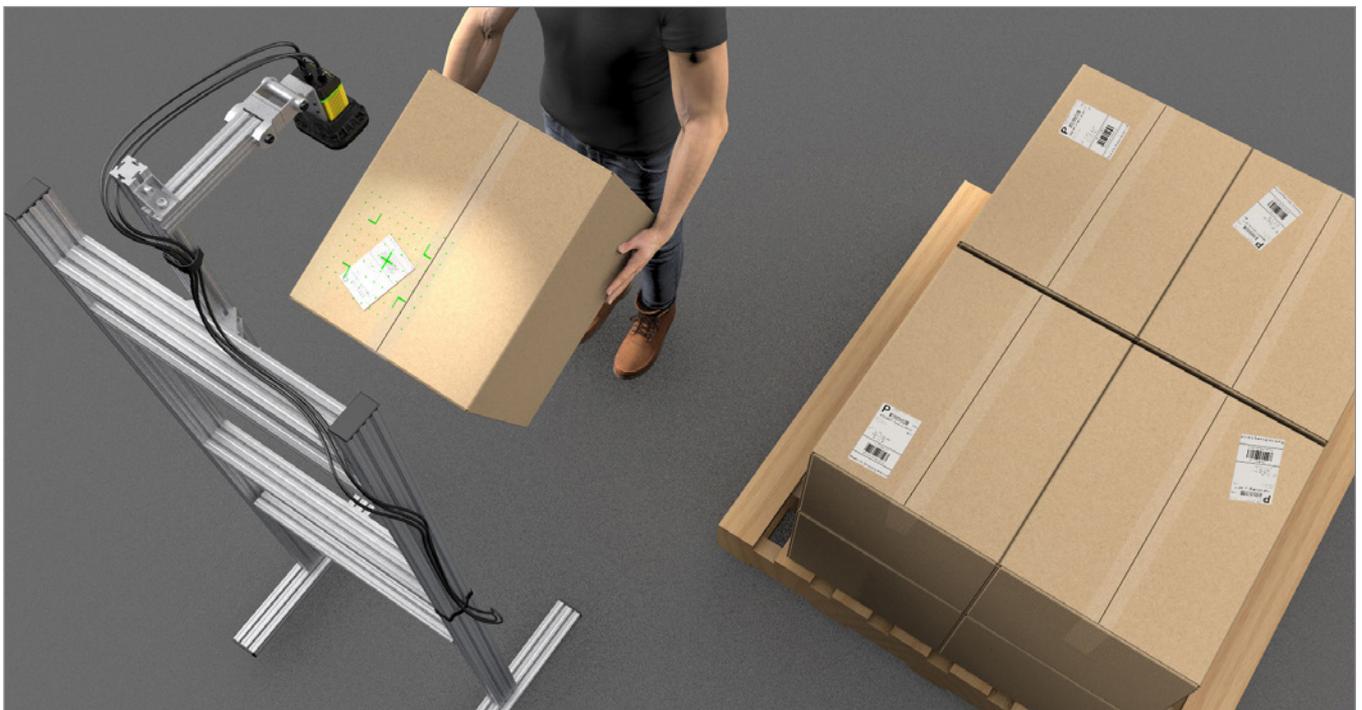
### Problem

Distribution facilities are always seeking more efficient ways to load and unload trucks as the faster they can get trucks in and out of a facility, the higher their throughput. In many cases, packages are manually loaded into trucks and stacked, one item at a time. To meet efficiency requirements, facilities are trending to building pallets prior to outbound shipment as it saves time and money as well as protects product during transport.

Part of the palletization process involves scanning each item before it is placed on the pallet. Traditionally, laser-based hand scanners are used for this purpose. However, these scanners have difficulty reading damaged or smudged codes, which means operators must take the time to print out a new label for the package which adds time and money to the process. In addition, since a hand scanner requires a free hand, the overall process of picking up an item, scanning it, then putting it on the pallet can be inefficient.

### Solution

Cognex's image-based overhead hands-free barcode reading solutions, featuring DataMan barcode readers, offer a hands-free solution to reading codes quickly, efficiently, and accurately. The overhead scanning configuration means operators can read and build pallets faster than if using handheld or ring scanners. In addition, this approach ensures distribution or fulfillment facilities ship the correct items, improves inventory accuracy, eliminates costly returns, and improves overall package traceability. Cognex barcode readers increase a distribution facility's efficiency and lower costs by using advanced algorithms to decode even the most damaged, distorted, blurred, or low-contrast label-based barcodes, delivering industry-leading 99.9% read rates.



Build pallets faster by deploying overhead hands-free barcode reading stations

# OUTBOUND SCANNING

**Quickly and accurately read codes on outbound packages so outbound trucks can be loaded faster while increasing traceability and reducing manual handling**

## Problem

Retail distributors and fulfillment facilities are seeking ways to improve traceability from the inbound dock door to the outbound dock door. To achieve “zero loss” of goods as they travel into and through a facility, management teams are becoming increasingly focused on quality of operations and asset management (minimizing loss) so verifying what goes on the outbound truck is very important. Many logistics facilities rely on ship sorter accuracy to ensure the right products are loaded on trucks. However, this approach does not always meet loss objectives.

Packages get lost, stolen, or get put on the wrong ship lane. Incorrect sorting can occur due to poor code quality and the scanning system’s inability to read the codes. It is not unusual for distribution centers to lose several dozen packages per day and tens of thousands over a year. Many companies use hand scanners as a basic point of traceability at the dock door. This causes unwanted delays as operators need to take extra time to pick up a scanner, scan a box, put the scanner down, and load the box onto the truck.

## Solution

Deploying a hands-free barcode reading solution just outside the truck, using DataMan fixed-mount barcode readers mounted overhead solves these challenges. Using advanced algorithms and decoding technology, Cognex barcode readers offer up to 99.9% read rates even for damaged or smudged codes, and even codes covered in shiny material. Using overhead scanning stations at the dock door enables operators to read and load more boxes per minute than if using handheld or ring scanners. Applying this approach ensures logistics facilities ship the correct items, improve inventory accuracy, eliminate costly returns, and improve overall package traceability.



Load outbound trucks faster and increase traceability with dock door hands-free barcode reading

# BENEFITS OF HANDS-FREE BARCODE READING STATIONS

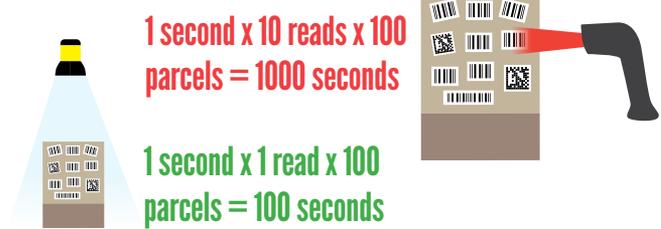
Overhead fixed-mount barcode reading offers many advantages to both the operator as well as overall process efficiency. Increasing operator output while reducing costs adds to the bottom line.

## Hands-free, ergonomic, no equipment handling



## Reads multiple codes at once for increased throughput

Time to read 10 codes on 100 parcels:



## Enhanced productivity, reduced costs, plug-and-play functionality, better ROI

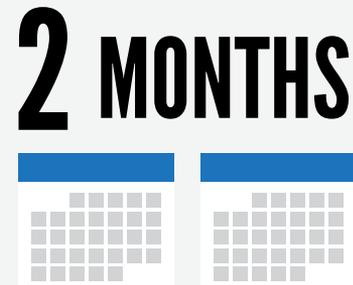
Assuming a 20% throughput improvement yields:



Lower cost for item processed



Productivity gained per station per day



Payback period

## Improved operator safety and well-being

- Ergonomically safer
- Reduced risk of a parcel being dropped or damaged
- “Always On” lights reduce operator fatigue
- Setup reduces musculoskeletal injuries



## Decreased maintenance/replacement Cost

- No moving parts or accessories that could get damaged or lost
- Reduction in associate-related injury costs



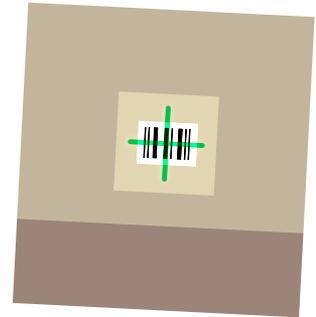
# WHY COGNEX HANDS-FREE BARCODE READING SOLUTIONS ARE BETTER

Using Cognex fixed-mount barcode reading solutions delivers a better experience for the operators while enabling them to perform their job better. Using feedback data helps optimize station efficiency.

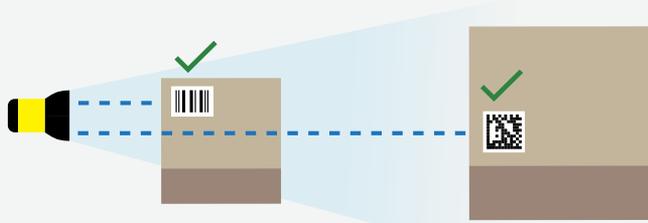
## Quickly reads multiple codes



## Laser aimer eliminates “fishing for a code”



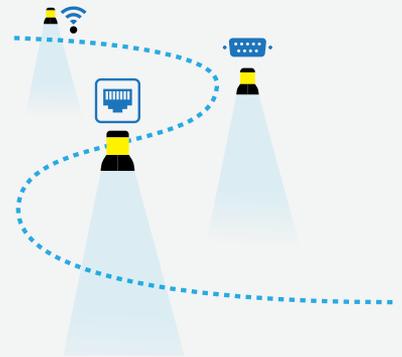
## Greater station flexibility



- Dynamic focus lens and high resolution sensor for maximum field of view coverage
- Provides a larger scan area to accommodate varying height and reach of associates

## Multiple connectivity options for stations mobility

- Ethernet with Industrial Protocols
- Serial
- Keyboard wedge
- Wireless
- Direct USB (with select DataMan readers)



## Clear visual indicators



Green LED when code is read



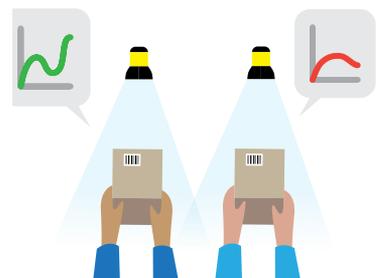
Customizable LED flashes red on read failures



Out of range indication

## Optimize processes over time

- Real-time performance feedback provides trends for actionable insights
- Code Quality Metrics



# TECHNOLOGY

## FOR OPTIMAL PERFORMANCE AND TRACEABILITY

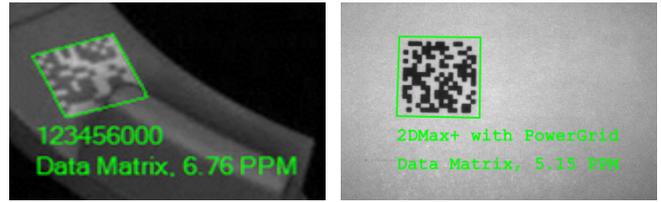
### 1DMax with Hotbars Technology

1DMax® with Hotbars® is optimized for omnidirectional 1D barcode reading, decoding up to 10x the speed of a conventional barcode reader, even with increased noise, limited contrast, and damage.



### 2DMax with PowerGrid

2DMax® with PowerGrid® is a breakthrough 2D decoding algorithm and technology designed to read 2D codes with significant damage to or complete elimination of a code's finder pattern, clocking pattern, or quiet zone.



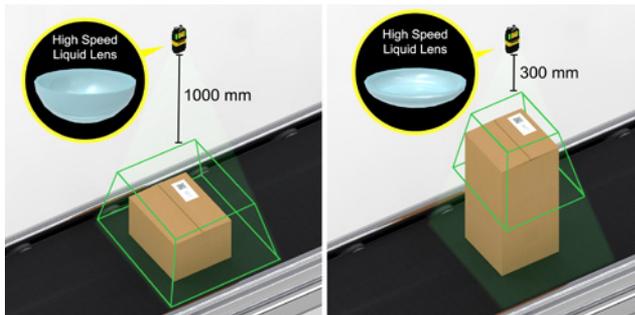
### High-Powered Integrated Torch Light

Using 16 programmable LED lights, high-speed autofocus technology, and distance sensors, the HPIT dynamically enables multiple read setups based on distance measurements.



### High-Speed Liquid Lens

Perfect for hands-free reading applications, Cognex High-Speed Liquid Lens (HSL) technology dynamically autofocuses by detecting how far away the target object is from the lens and rapidly auto-adjusting focus before the next image is taken to ensure a crisp image.



### Edge Intelligence

Cognex Edge Intelligence (EI) technology transforms big data into smart data to improve overall equipment effectiveness (OEE) and throughput. EI allows users to configure multiple devices at once, begin trending important system performance measurements within minutes, identify root causes faster, and resolve them sooner.



# IMAGE-BASED BARCODE READERS

## Fixed-Mount Barcode Readers

Compact but powerful DataMan® fixed-mount barcode readers offer unmatched code reading performance with patented 1D and 2D code reading algorithms. Flexible options, easy setup, and quick deployment make them ideal for the most demanding manufacturing and logistics applications.

[www.cognex.com/fixed-mount-readers](http://www.cognex.com/fixed-mount-readers)



## Handheld Barcode Readers

Versatile DataMan handheld barcode readers can accommodate 1D and 2D label-based barcodes as well as direct part marked (DPM) codes for the widest variety of surfaces and marking methods. They are equipped with the latest patented technology, rugged housing, and modular communication options to operate in any environment.

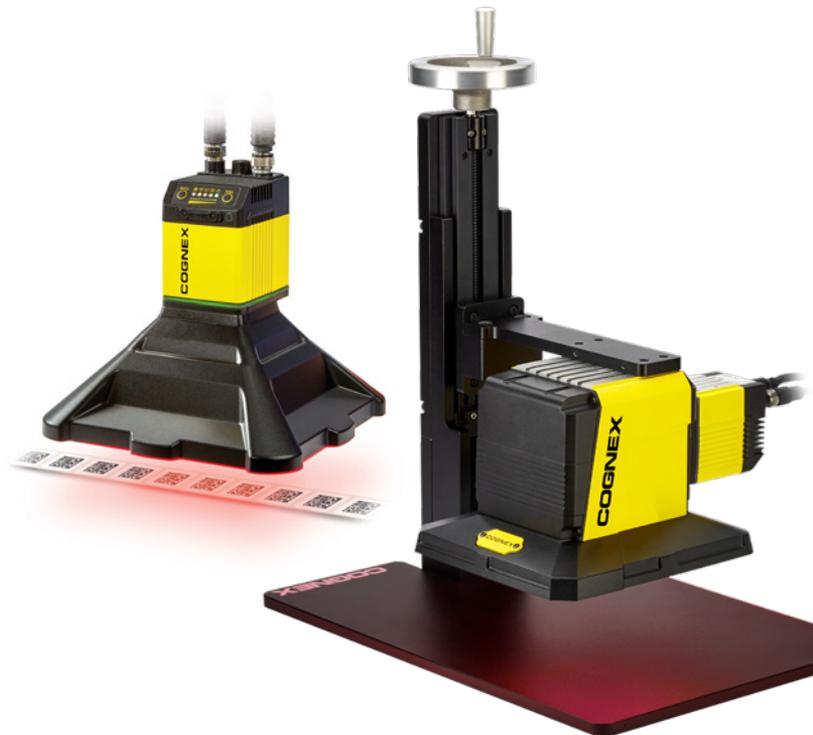
[www.cognex.com/handheld-readers](http://www.cognex.com/handheld-readers)



## Barcode Verifiers

Cognex barcode verifiers grade the quality of 1D, 2D, and DPM codes to ensure readability and compliance with globally accepted standards. Using high-quality optics and advanced algorithms, these verifiers provide guidance through the marking process to generate codes that meet minimum quality standards.

[www.cognex.com/verifiers](http://www.cognex.com/verifiers)



# BUILD YOUR VISION

## 2D VISION SYSTEMS

Cognex machine vision systems are unmatched in their ability to inspect, identify and guide parts. They are easy to deploy and provide reliable, repeatable performance for common to complex tasks.

[www.cognex.com/machine-vision](http://www.cognex.com/machine-vision)



## 3D VISION SYSTEMS

Cognex laser profilers and area scan 3D vision systems provide ultimate ease of use, power and flexibility to achieve reliable and accurate measurement results for the most challenging 3D applications.

[www.cognex.com/3D-vision-systems](http://www.cognex.com/3D-vision-systems)



## VISION SOFTWARE

Cognex vision software provides industry leading vision technologies, from traditional machine vision to AI-based image analysis, to meet any development needs.

[www.cognex.com/vision-software](http://www.cognex.com/vision-software)



## BARCODE READERS

Cognex industrial barcode readers with patented algorithms provide the highest read rates for 1D, 2D and DPM codes regardless of the barcode symbology, size, quality, printing method or surface.

[www.cognex.com/barcodereaders](http://www.cognex.com/barcodereaders)



# COGNEX

Companies around the world rely on Cognex vision and barcode reading solutions to optimize quality, drive down costs and control traceability.

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