

The Power of MOBILE PRINTING

In the Warehouse and Beyond

Today's businesses must focus on lowering operating costs while maximizing production and improving responsiveness to customer demands.

Many industries are implementing greater mobility into warehouse and distribution functions to speed production. Today's new rugged,

high performance mobile printers are being employed for added productivity, accuracy and lower costs.

Find out how the leading manufacturer of mobile printing technology can help you implement mobile printers to enhance your business.



Authored by Datamax O'Neil [datamax•oneil](http://www.datamax-oneil.com)

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The Partnership That Delivers Label and Barcode Printing Solutions



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The Power of Mobile Printing in the Warehouse and Beyond . . .



In today's precarious economic environment, global enterprises are experiencing a dual pinch: one, difficult times have cut operating budgets significantly, and rehiring to support growth after the contraction remains difficult; secondly, as investments in new equipment and systems have been delayed or denied, the optimization of warehouse and supply chain processes has become a critical factor in balancing costs, labor, and assets. What's more, this optimization must occur while maximizing productivity and improving responsiveness to customer demands.

With the growing emphasis on cost cutting, companies need to find new and better ways to enhance efficiencies and ensure accuracy across their supply chains and distribution networks. One strategy that is still effective in helping achieve this goal is the implementation of greater mobility into warehousing and distribution functions through devices such as mobile printers.

According to a recent study, mobile devices and software commonly improve workforce production by 20 percent or more. This translates into lower labor costs, lower operating costs, and faster payback on investment.¹ Such gains are not hard to envision. By minimizing the time needed to print labels and apply them to materials, work in process, finished goods, pallets, boxes, and so forth, mobile printers help drive down labor costs while improving performance on the warehouse and DC floors.

Similarly, companies bound by centralized printing and labeling solutions risk diminished productivity and increase the likelihood of errors because workers have to leave their positions to travel to and from the centralized printing station to retrieve bar code labels. While the integration of these centralized stations with enterprise applications has proven effective in driving up efficiencies and driving down costs, they have in many cases reached their potential. To further streamline the operation of processes and extend the value of software and computer assets within the warehouse, mobile printing solutions can empower the worker, right where he or she is at that moment, whenever he or she demands this functionality.

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Why Datamax-O'Neil?



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right by our customers.

The Case for Mobile Printers in the Warehouse ■ ■ ■

Greater efficiency and reducing the cost of errors are the two principal drivers of mobile printing in warehouse operations.

Imagine a shipping dock. In larger companies, a shipping bay could have anywhere from four to 400 doors (the latter being a FedEx, UPS, or similar scale operation). Smaller and mid-sized manufacturers have shipping docks with four to eight bays, either inbound or outbound. Usually one printer serves four bays; eight bays may call for two printers. When pallets are unloaded from a truck that is delivering goods to be stored in a receiving warehouse, a forklift is used to get the goods from the truck. Sometimes an entire pallet goes in, but in many cases the pallet has to be broken down. In either case, the destination for goods has to be identified and catalogued, and a label has to be put on each piece, so that it can be identified in the system (i.e., these are wheel bearings, those are something else).

The items have to be assigned to a location in the warehouse. All this information has to be clear so that the manufacturing process can move forward. If every time a worker goes to a pallet, they have to go to a printer that is at the end of their loading dock, operator time is going to be wasted. The operator has to go back and forth, pick up the label, put the label on, and then take the item back to the warehouse. On the other hand, in this environment, if the operator is wearing the printer or the printer is attached to a forklift, then the operator can print labels as soon as items have been identified on the pallet—as soon as the pallet is touched. The operator spends less time going back and forth to the stationary printer, and efficiency is increased.

This point—when the operator first touches the pallet—provides the perfect opportunity to reduce errors. Any one of a million things can happen on a loading dock. When stock is pulled off the truck and somebody goes to the printer to pick up a label, he or she may run into a buddy and chat about Monday Night Football or what happened at a child's birthday party over the weekend; or, a call may come in to do something else that's work related. Any of these distractions can lead to labeling errors. If this occurs, items may go to the wrong place in the warehouse, or—worse—outbound items may get shipped to the wrong destination. Mobile printing greatly reduces the likelihood of such errors and their associated costs, which can drive costs upwards by 15%²

Put simply, warehouse operations are intrinsically labor-intensive, which often leads to errors and inefficiencies. By empowering printing at the point-of-use, mobile printers speed time to completion and improve compliance, as print and label execution becomes a more natural part of the employee's workflow. This change can significantly improve most typical warehouse processes.

1 Redefine Receiving

Instead of workers moving to printers at the end of the dock or from the dock to the IT office to pick up labels of advance ship notices that are printed and stored upon receipt, they can print at the point of receiving from belt- or forklift-mounted label printers. In this way, bar codes or RFID labels can be affixed immediately upon unloading, ensuring that incoming items are prepared accurately for the warehouse's automated processing systems. This eliminates the time required for round trips between the dock and office, and minimizes the chance that a worker could apply a wrong label. Labeling items in this manner also ensures that 100 percent of incoming items are bar-coded, so that warehouse applications can be fully leveraged.



2 Capitalize on Cross-Docking

By minimizing steps for personnel, mobile printing optimizes cross-docking procedures used at a trans-shipment point to save time and labor in moving goods from an inbound vehicle to an outbound vehicle. Staff equipped with mobile devices can receive inbound shipments, log them into the warehouse management or inventory control systems with a mobile computer or handheld device, and then use a mobile printer to create labels with the appropriate cross-docking information. Doing this at the point of use speeds the process while improving accuracy.

3 Make Putaway Painless

Inherent delays in the fixed-printer model—routing to and from the printer, time spent at the printer per se—have had a negative effect on putaway. Using mobile printers within integrated environments that include mobile printers, wireless networks, and shared databases can attain significant efficiency gains over an architecture that utilizes stationary devices located near, but not at the point where the work actually happens. Specifically, an integrated system empowers personnel to initiate label requests by entering data into a handheld computer that transmits the data to the company's ERP system over a wireless LAN. After the ERP system receives the transmission and updates inventory, information required to create the appropriate label or labels is sent back to the handheld for mobile printing.

MOBILE PRINTING



4 Picking Possibilities

Since picking is essentially the opposite of putaway, mobile printers can provide this function with similar time and cost savings. By enabling operators to pick multiple orders simultaneously and within a very small footprint, mobile printers drive down empty transit time and drive up productivity. The printers are used to create barcode or RFID labels for each individual item; these are subsequently scanned to speed the sorting of items for shipment.



5 Excellence in Packing and Shipping

When a manufacturing process is finished, personnel can use the mobile printer to create a label for the finished goods; or, warehouses and distribution centers can use mobile printers to manage ship-to-order requirements. Workers can use labels and scanning to verify the pick/pack of all items necessary to complete an order, eliminating the need to identify and label final assemblies.

The processing of ship-to-order requests can be improved by labeling items with an order code to associate them with a specific customer during picking or packing. When the order finishes, a mobile printer creates the shipping label, ensuring accuracy in packing and shipping.

Beyond the Ordinary

In addition to the classic warehouse procedures (receiving, QA, putaway, picking, packing, and shipping), mobile printers are proving effective in driving efficiencies in other labeling applications, including:

- Asset Tracking
- Compliance Labeling
- Inventory Control
- Real-Time Tracking Status and Spare Parts
- Spare Parts Inventory
- Asset Utilization
- Customer Compliance
- Overage, Shortage, or Damage

Mobile printers are also showing value in other environments. For example, on the manufacturing shop floor, mobile printers are being used more in actual production areas—around production lines, workstations, machines, and equipment—where point-of-work printing access can drive up efficiencies by eliminating wasteful travel and social dwelling time. Leading applications include product labeling, compliance and other shipment labeling, receiving, invoice printing, WIP tracking, order form printing, and bill of material (BOM) printing.

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In logistics, route workers are using mobile printers to provide customers with pickup receipts and create barcode or RFID labels for packages they collect. Creating and applying labels this way takes seconds, saving hours of processing labor.

On the retail floor, mobile printing units are being used in the front-end store areas where products are advertised, marketed, and sold. This use includes outdoor selling environments such as lawn and garden displays or lumberyards. Primary applications include price marking, POS/receipt printing, shelf labeling, and signage/promotional printing, but portable printers can be used to improve efficiency and reduce errors in backroom storage and distribution applications as well.



Why Datamax-O'Neil?

The value of doing portable label printing in a warehouse or manufacturing environment is well established in markets where labor cost is high. Those who are doing mobile printing understand its benefits. For those who have come to this realization or have made a decision to move to portable printing, why does Datamax-O'Neil make sense as a supplier?



Two Compelling Reasons ■ ■ ■

Number one is ruggedness. In mature markets, which generally are markets with higher labor costs, many installations have already been done. When it comes to portable devices, whether it is a printer, hand-held terminal, smartphone, or laptop, those who have used these devices know the cost of supporting a non-ruggedized solution is significant. They know that the total cost of ownership does not pay off when you have to buy extended warranties or have a large hot swap pool to replace units that keep going down so operators can keep working, either on the manufacturing floor or in the field. Datamax-O'Neil mobile printing solutions eliminate these problems because they are ultra-rugged by design, providing a truly durable solution that doesn't need frequent maintenance or replacing.

Number two is easy integration. Datamax-O'Neil printers are designed to reduce your fixed cost of installation, even when the printer comes with a full complement of accessories (e.g., fork-truck mounts, power supplies for in-vehicle applications, multiple battery chargers).

Accessories also include language emulators; Datamax-O'Neil has control language emulation that covers ZPL, CPTL, and IPL, as well as Datamax-O'Neil's own DPL. No other mobile printer manufacturer has greater language emulation capability than Datamax-O'Neil. Many Datamax-O'Neil printers can automatically interrogate the data stream and apply one of many control languages that is native to the device. The rugged and portable RL4™ 'speaks' six different control languages!

Easy integration also means integrating well with Warehouse Management Systems (WMS). SAP has a WMS module specifically designed to improve warehousing environments, as do Oracle, Manhattan Associates and many other WMS solution providers. These companies make software specifically designed to allow manufacturers to better organize the flow of products across their shop floors and through their warehouses. Datamax-O'Neil's proven compatibility with these WMS is another important differentiator.

Datamax-O'Neil mobile printing solutions provide unsurpassed durability and ease of installation and ease of use to satisfy the needs of your extended enterprise. Specific solutions for your warehousing, distribution center, retail, or route accounting applications keep your business efficient and error free. We are reliable partners for customized solutions that ease integration and reduce risk.

Datamax-O'Neil has one of the industry's best and broadest lines of mobile printers. Our mobile portfolio includes ultra-rugged receipt printers, forklift printers, thermal receipt printers, thermal label printers, and multi-part dot matrix printers. Our new RL4™ is the industry's most rugged 4-inch label printer, and is ideal for wearing on a belt or mounting to a forklift. It delivers what you want: labels where you are, when you want them!

NOTES

1. "Rationalizing Maintenance without Compromising Capability," ARC Insights, Arc Advisory Group, July 22, 2010.
2. "InfoTrends/CAP Ventures Studies Document Costs for Major Organizations Worldwide," InfoTrends/CAP Ventures, September 28, 2005.



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right by our customers.



features at a glance ■ ■ ■

- Rugged and Reliable** - With uncompromising standards, the RL4 endures even the most punishing environments, and passes the MIL-STD 810F drop testing requirements. The RL4 is so rugged it continues to print after 26 consecutive drops to concrete from 6ft (1.8m) even when tested at extreme temperature conditions.
- Complete Line of Accessories** - The versatile RL4 comes with a wide selection of charging and mounting accessories that allow it to be worn on the hip, mounted in a truck or even mounted and powered from a forklift.
- Easy to Integrate** - The RL4 comes with popular language emulations that allow you to easily replace existing printers in the workplace. The printer is also compatible with most popular WMS packages and offers optional wireless 802.11 and Bluetooth connectivity.
- Great Battery Power** - The long lasting lithium-ion battery offers maximum power capacity for a full 8-hour shift, even under the toughest conditions.
- Easy to Use** - Nobody likes to change the paper roll, but we've made it so easy you can do it with one hand. We've also included an easy to read LCD screen with simple user interface buttons and a peel-and-present mechanism for quicker label application.
- Complete Line of Media & Supplies** - Our Certified Label Supply Program ensures optimum, trouble-free performance from the RL4 and guarantees the highest quality print output and image stability.
- Two Year Warranty** - Comes with the industry's only two-year standard warranty - twice that of the competition!

Datamax-O'Neil built its reputation on rugged and reliable portable receipt printers and has now used this expertise to design the industry's most rugged portable label printer. The RL4 is a durable 4-inch (102mm) direct thermal printer with a rugged design and reliable performance that will continue to operate long after other printers have failed. We're so confident in the quality and long term reliability of these printers that we include a 2-year warranty free of charge. That's double what the competition offers.

Anybody who's ever been in a warehouse knows that when shipments are processed more quickly and effectively, productivity is increased and errors are reduced. The RL4 improves efficiency and productivity by allowing workers to print and apply barcode labels directly at the point of application. Using an RL4 to print on-demand labels also eliminates the danger of mixing up batch printed labels and saving thousands of dollars in potential shipping errors. The printer can even be mounted on fork trucks for added convenience and versatility.

We've made integration easy. Replace existing printers using Datamax-O'Neil's language emulations. The RL4 is compatible with most popular warehouse management software programs, independent label design programs and remote management packages.

popular applications ■ ■ ■



Logistics and Distribution

- Inventory Labels
- Content ID Labels
- Receiving and Location Labels
- Shipping Labels



Parcel

- Shipping Labels
- Cross Docking Labels
- Bin Labeling
- Stop Location Labels



Manufacturing

- Work in Process Labels
- Receiving and Location Labels
- Content ID Labels
- Shipping Labels



Cold Storage

- Receiving and Location Labels
- Content ID Labels
- Shipping Labels

your benefits ■ ■ ■

Increase Efficiency & Reduce Errors -

In many warehouses, workers travel to and from a central location to pick up "batch printed" labels. While this method works, it also creates wasted movement and potential labeling errors. The RL4 eliminates the danger of "label mix up" by printing labels at the point of application. And, since workers aren't wasting time traveling to a central location, warehouse operations are far more efficient and productive.

Increase Productivity - The RL4 is built to keep pace in a busy warehouse. Labels print quickly and accurately every time, even in cold environments. Downtime is reduced thanks to a large media roll capacity and a battery that stays charged for a full shift.

Enjoy Higher ROI - In today's tough economic times, you can't afford to buy printers that fail. The RL4 comes with Datamax-O'Neil's legendary reliability and is backed by the industry's only standard two-year warranty.



Did you know?

Using quality labels and paper can significantly prolong the life of your printhead. Datamax-O'Neil offers a wide variety of high quality media for its printers including custom and stock labels and receipts, ticketing media, and cleaning products. When you choose Datamax-O'Neil, you receive a proven commitment to superior quality. Quality that results in performance and compatibility... Guaranteed.



ROI of Ultra-Rugged

Ultra rugged products are often overlooked because of the purchase price, but many studies have shown that the cost of implementing lower cost hardware for professional use, especially in applications where products may be dropped or bumped frequently, is much greater than the cost of purchasing ultra-rugged equipment. RL4 printers embrace abuse. They take the punishment outlined in the MIL-STD 810F standards, and continue to operate flawlessly even after being dropped multiple times from a height of 6 ft (1.8m) onto concrete.

- 1** Dual wall construction and rubber bumpers protect critical printhead and platen roller alignment by absorbing and displacing energy when the printer is dropped or bumped.
- 2** Die-cast magnesium bracket, large stainless steel hinge pin and large gears further protect the platen roller.
- 3** Unlike plastic or thin metal that break/bend easily when dropped, die-cast magnesium latches provide the perfect weight to strength ratio. Latches are lightweight yet rugged enough to endure repeated use and repeated six foot (1.8m) drops to concrete.
- 4** Robust media arms are constructed using thick media posts that won't jam or snap off easily. Large screws and durable glides ensure that this moving part will continue to operate trouble-free for the life of the printer.
- 5** Arched design with rubber housing protects the recessed LCD screen and buttons. Internal anti-shock and anti-dampening foam further protects the LCD device.



- 6** Port covers are made of a durable, rubberized material to protect against external environmental agents when ports are not in use.

We've leveraged our historic knowledge of rugged portable printers to ensure that the printer's circuit boards are well protected by the RL4's outer shell and isolated sub-structure.

Testing One of the reasons we are able to include the **industry's only 2-year warranty** is because of our extensive engineering experience and rigorous testing.

Dropped again and again...The RL4 was tested using military MIL-STD 810F testing procedures which require that the printer operate after being dropped on all corners, edges and faces for a total of 26 consecutive times. The RL4 passed MIL-STD 810F testing from a height of 6 feet (1.8m) onto solid concrete!

Wear & Tear - Recessed latch and port covers were opened and closed 30,000 times during testing to ensure their integrity and long term reliability.

Environmental Temperature Testing - The RL4 was put through exhaustive testing to ensure its flawless performance at extreme temperatures including the freezing environments common in cold storage applications.

About Datamax O'Neil.

Datamax-O'Neil manufactures an extensive selection of industrial, desktop, and portable label printers that are ideal for manufacturing, warehouse, healthcare and RFID labeling requirements.



These printing solutions enable manufacturing and supply markets to capture the benefits of automated product identification. The company's products address a wide, diverse range of applications to deliver value-driven printing solutions that minimize risk and maximize efficiency, safety, and quality.

About Winco Identification Corp.



Founded in 1980, Winco ID has established a standard of excellence in designing, implementing, and servicing identification solutions to enhance productivity and lower operating costs to compete in today's global economy.

Winco ID incorporates leading-edge advancements in labeling, bar coding, and RFID technology for secure identification, tracking and traceability from the component level, finished product, and throughout the entire supply chain.

Our full-service approach to total identification solutions gives our customers access to our professional team of experts throughout the entire process, helping them manage growth and changes in the marketplace.

Our Partnership - Your Benefits

Winco ID partners with Datamax-O'Neil to provide reliable print systems for your barcode and identification labeling needs. By combining the strengths of both companies, you have one source that delivers complete, proven solutions for all your barcode system needs.

From those just starting to implement bar code systems, to those with complex labeling and identification requirements, you get cost-effective and solid solutions for your barcoding success.

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