

A detailed 3D wireframe rendering of a warehouse. The interior shows a large open space with several workstations, each consisting of a desk and an office chair. A long conveyor belt or loading dock area runs along the right side. Outside, a semi-truck is parked on the left, and another semi-truck is positioned at a loading dock on the right. The entire scene is rendered in a light gray wireframe style, highlighting the structural elements and layout of the facility.

# **WAREHOUSE DIMENSIONING:**

## **MAXIMIZING PROFIT FROM RECEIVING TO SHIPPING**

## WAREHOUSE DIMENSIONING: HOW TO COUNTERACT COSTS & STRETCH SAVINGS

Using dimensioning systems throughout warehousing processes establishes the foundation companies need to succeed as they implement other time and money-saving tools that are changing the industry in the world of e-commerce.

Warehouse sizes are dramatically decreasing in today's drive for companies to consider smaller spaces in urban locations. These smaller buildings, typically found in urban locations, enable both large and small companies alike to meet the speedy last-mile delivery times demanded by e-commerce trends. Because of the competition for the smaller setups, they come at a higher price.

*In fact, according to real-estate consulting firm CBRE Group Inc., rents for U.S. warehouses of between 70,000 and 120,000 square feet rose by more than 33.7% over the past five years, to an average of \$6.67 per square foot.\**

Fortunately, dimensioning systems simplify and speed up warehouse processes to offset high overhead costs such as leasing. They can also mitigate common issues that prevent warehouses from fulfilling e-commerce customers' desire to receive the perfect order, and typically smaller orders, in less time using fewer resources.

It's not just about satisfied customers, though. Dimensioning systems are powerful tools in helping companies integrate other innovations such as vertical lift systems, pick-to-light systems, and automated guided vehicles, all of which contribute to higher profits.

This whitepaper explores the advantages of using a dimensioning system through each aspect of warehousing to alleviate warehouse operational expenses, particularly in relation to e-commerce.

\* <https://www.wsj.com/articles/e-commerce-driving-bigger-demand-for-smaller-warehouses-cbre-says-11570701600>



### - Receiving new SKUs

**Problem/Cost:** Manual receiving operations are prone to mistakes. Slow measuring and weighing of items can be inaccurate due to human error and tediousness, and the results can often be recorded inaccurately. Human accuracy takes more time, and the more quickly and accurately employees can do their jobs, the better the impact to your bottom line.

**Solution/Savings:** By measuring small parcels and items with a dimensioning system such as the [Cubiscan 25](#), employees can instantly receive data that verifies the product and indicates its proper slotting and storage. With this system, warehouse companies can increase their volume of SKUs more efficiently while reducing time and manpower costs.

The [Cubiscan 25](#) measures and weighs irregularly shaped parts and components as well as boxed items with great precision using infrared sensing technology. It is commonly used to improve storage-space planning in medical, pharmaceutical, apparel, hardware, and consumer goods applications. The touchscreen display is easy to use, and the collected data can be automatically sent to a warehouse management system.

*“It’s critical for inventory management systems to know the correct size of items for the rest of the processes to work properly. Dimensioning systems are the first step to saving money, and the Cubiscan 25 has no competition in terms of accuracy or capability.”*

Mike Hinckley  
Cubiscan, Direct Sales Executive

### - Slotting SKUs Accurately

**Problem/Cost:** The process of slotting, which ensures that products are assigned to the most appropriate storage method, and optimizes the process of picking, often takes a lot of time and brainpower. While slotting can minimize product

loss, occurring from heavy merchandise crushing lighter products, estimations can be problematic.

**Solution/Savings:** Irregularly-shaped items, such as medical devices, pharmaceuticals, apparel, hardware, and consumer goods, can be measured with great precision using the infrared sensing technology of the [Cubiscan 125](#). A mobile cart and useful accessories such as a portable power supply are available to create a completely mobile cubing, weighing, and identification workstation. Using the [Cubiscan 125](#) enables employees to make better slotting decisions by knowing the exact dimensions and nesting capabilities of SKUs, all while creating a more efficient process.



## - Storing Unique and Bulky Shapes

**Problem/Cost:** With rent at a premium, warehouses must use every inch of their buildings carefully.

**Solution/Savings:** Dimensioning systems encourage storage density by providing accurate data so that items can be stored in proper locations as compactly as possible.

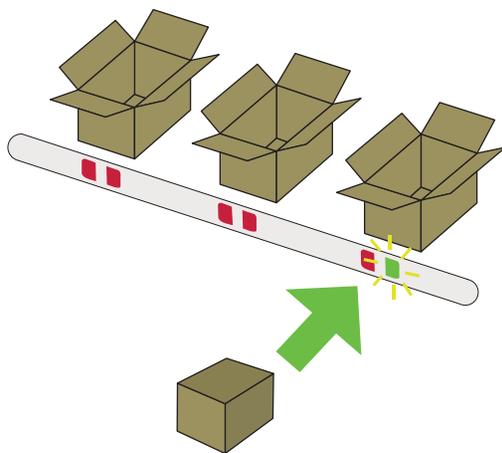
*“Qbit, which is the software that Cubiscans come with and use, even has a nesting feature that can help employees identify how many products can be stacked, or nested, inside one another vertically.”*

Robert Kennington  
Cubiscan, Director of Engineering

## - Improve Picking Efficiency

**Problem/Cost:** As vertical lift systems become more commonplace, even robots can make mistakes without accurate data. Pick-to-light systems also cannot work as designed if dimensioning information is not correct.

**Solution/Savings:** Robotics involved in automatic retrieval systems can know precisely where to go for an item if it has been properly dimensioned and slotted. For small items, a Cubiscan 25 or Cubiscan 125 is ideal. Using a [Cubiscan 325](#) to measure larger items also includes the benefit of a compression feature for carton size selection. The sensing gates on these machines are moved by hand to allow the user complete control over the measuring process.



With correct dimensioning information, pick-to-light systems can increase productivity and efficiency, as well as reduce picking errors. These systems are

also paperless, which can save time by eliminating the step of skimming through paper-based records.

#### - Don't Waste Corrugate or Ship Air

**Problem/Cost:** When employees estimate what size of box to place an item in, a variety of problems can arise. By using a box that is too large, the company could pay to ship air as well as waste money and resources on void fillers and packing materials. If the box is not large enough, processes slow down when the item needs to be removed and repacked.

**Solution/Savings:** An optionally-conveyORIZED dimensioning system, such as the [Cubiscan 225](#), is useful for on-demand box making. It is capable of measuring boxes and irregularly-shaped objects with high precision, and can be used as a stand-alone unit, or can be installed in an "in-line" configuration with auxiliary conveyors. Measuring items quickly and accurately enables employees to spend less effort selecting the correct box the first time. Companies can also reduce the hassles which come with managing a large box inventory.

### - Check Weighing for Order Verification

**Problem/Cost:** Manual order inspections increase time and labor costs.

**Solution/Savings:** After a SKU's weight has been calculated by a dimensioning system and uploaded to the warehouse management system, the data can be used to verify picking. The warehouse management system calculates how much each carton should weigh based on its size and each of the items it contains. A Cubiscan can help detect anomalies and support compliance, as well as prevent loss.



which larger and heavier items should be placed on the bottom, and which smaller and lighter items should be stacked on top.

### - Building a Pallet—Fast and Sturdy

**Problem/Cost:** Load instability can lead to substantial loss and safety issues.

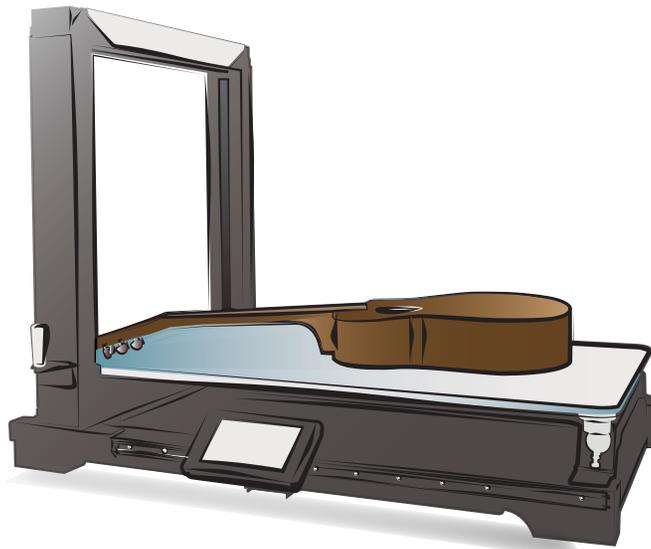
**Solution/Savings:** By using dimensioning systems to collect data and then transfer that data to the warehouse management system, determining how items should be arranged on the pallet is a quick and painless process. Employees can clearly see

### - Cube out a Truck or Trailer

**Problem/Cost:** Inaccurate data reduces load efficiency.

**Solution/Savings:** When a dimensioning system like the [Cubiscan 325](#) collects product data about items in an order, the warehouse management system can more effectively help with generating load setups for trailers.

The [Cubiscan 325](#) measures and weighs irregularly-shaped parts and components as well as boxed items. Small and large items are measured with great precision using infrared sensing technology.



Whether a warehouse is shipping irregularly shaped products, cases, full pallets, or a mix of those configurations, accurate data quickly feeds into the appropriate software, which then determines how to load the truck to stay within weight limits while making the best use of space.

## - Decrease Shipping Expenses

**Problem/Cost:** Without correct dimensional data, expensive mistakes happen.

**Solution/Savings:** Because carriers use dimensional-weight billing, a shipper sending a large, low-density package needs to determine both the package's actual weight, and its dimensional weight which takes into account the package's length, width, and height. The higher of the two becomes the factor for the freight charge.

With precise dimensional data, shippers can avoid chargebacks from carriers because they're calculating their parcels correctly. Another advantage of collecting dimensional data is that shippers can estimate carrier charges. That enables companies to decrease shipping expenses by rate shopping.

*"In the world of e-commerce, it's absolutely critical to have confidence in your dimensions. You need to know what they are, or you can't reduce costs."*

Mike Hinckley  
Cubiscan, Direct Sales Executive

## - Increase Sustainability/Reduce Carbon Footprint

**Problem/Cost:** Inefficient processes create waste, negatively impact the environment, and diminish brand reputation.



**Solution/Savings:** Dimensioning systems like Cubiscans encourage greater sustainability by reducing waste on boxes and packing materials, and identifying the best packaging solutions. Throughout warehouse processes, savings on supplies like paper are evident as everything can be done electronically. Resources involved in storing or shipping air, like corrugate and dunnage are conserved, and saving the environment can save money. Properly cubed out trucks equals fewer trucks on the road, decreased spend on fuel, and less wear on company assets. It also sets an example of responsibility that consumers are looking for.

## - Improve Customer Relationships

**Problem/Cost:** Poor data means losing customers.

**Solution:** Accurate data improves the service you can provide to customers. For example, customers can be confident that they're being charged fairly for shipping costs when the dimensional data is noted on invoices. They can also improve their own operations when they use that information in their processes.

## - Conclusion

As e-commerce continues to demand faster and faster perfection, the face of warehousing is changing. Accurate dimensional data is ground zero for improving warehousing processes. It enables all other systems and software to function as they should, leading to increased profit and efficiency.

Have specific questions and want to talk to us directly? Call us at (801) 451.7000 or email us at [info@cubiscan.com](mailto:info@cubiscan.com) and we'll be happy to discuss your dimensioning needs.