



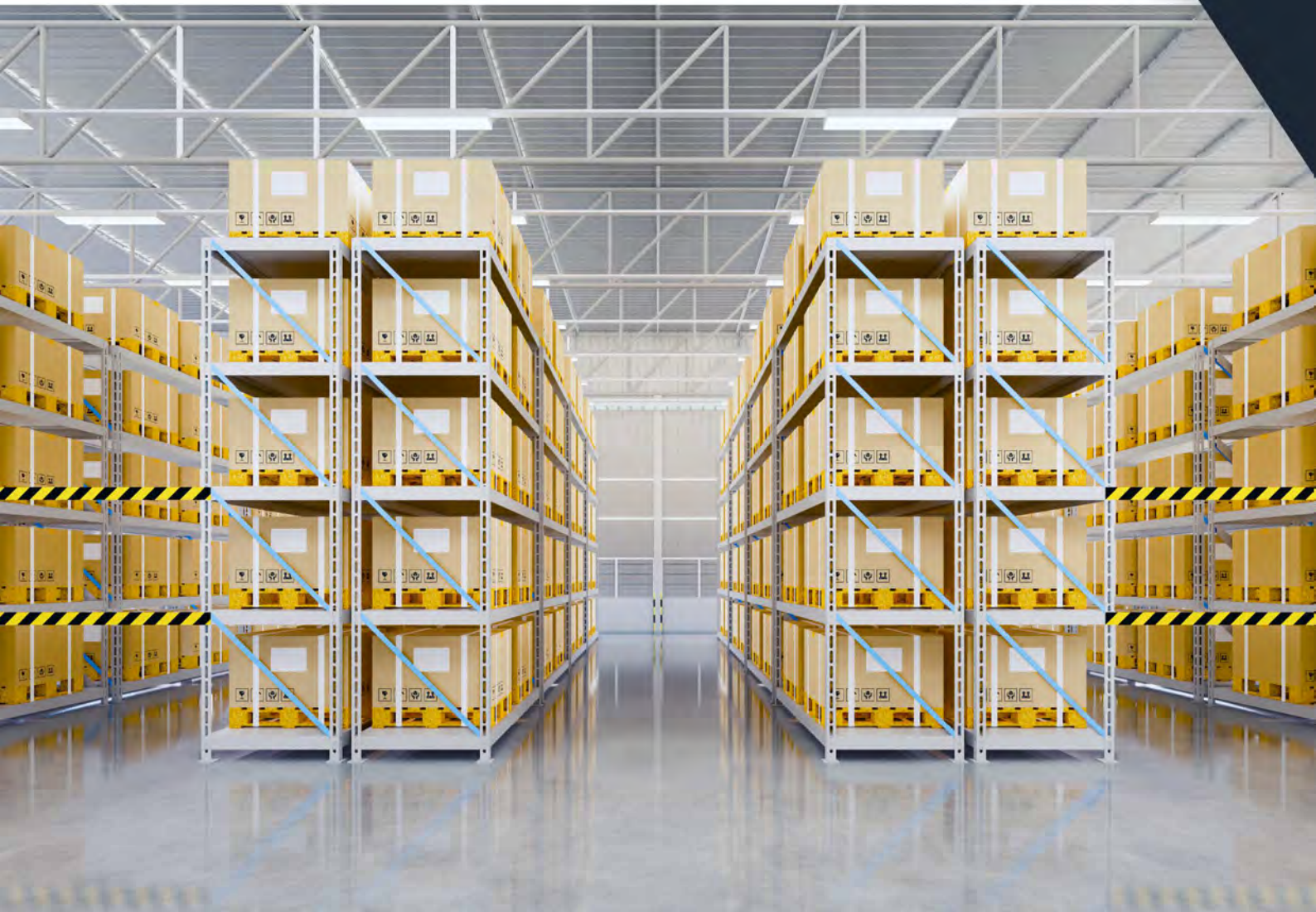
VisAI Labs

5 reasons why dimensioning and weighing are MVPs of warehouses





SUMMARY



Warehouses are dealing with rapidly-changing customer expectations and need for efficiency and flexibility through self-optimization. Find out why dimensioning and weighing systems have become their Most Valuable Players!



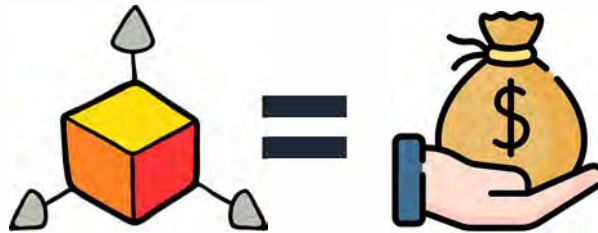
Table of contents

INTRODUCTION	.....	4
DIMENSIONING AND WEIGHING - PROFITABILITY DRIVERS	.....	5
TRADITIONAL VS. AUTOMATED DIMENSIONING	.....	6
WHAT ARE DIMENSIONING AND WEIGHING SYSTEMS?	.....	7
TYPES OF DIMENSIONING EQUIPMENT	.....	8
TOP FIVE BENEFITS OF DIMENSIONING AND WEIGHING	.....	10
CONCLUSION	.....	15



Efficient, sustainable warehouses are the backbone of e-commerce, retail, healthcare, manufacturing, and wholesale distribution industries. Shrinking warehouse sizes, changing customer expectations, and demand for seamless one-day delivery and shorter lead times have triggered businesses to rethink efficiency and optimization.

In the world of warehousing, Space = Money



Increasing the efficacy of warehouse and fulfillment center operations is crucial for businesses to increase profitability. Effective utilization of space and effort increases the viability of companies whose operations involve warehouses, trucks, trailers, shipping containers, and aircraft cargos.

As companies are looking for ways to deliver value and increase margin, there is an augmented focus on improving the productivity of supply chain functionalities. Determining the correct size of Stock Keeping Units (SKUs) is essential for supply chain processes such as slotting, cartonization, quality control, and shipping, to fall in place and function efficiently.

Let's take the eCommerce industry as an example. Packaging is a vital part of the operational journey to ship orders. If the dimensioning and weighing capabilities are not effective enough, it can lead to decreased workforce productivity and increased costs, including dunnage costs. Dimensioning and weighing systems can go a long way to automate the packaging process and select boxes with the best fit.



Dimensioning and Weighing – Profitability Drivers

Dimensioning and weighing are effective means of saving money, driving margins, and profitability by optimizing functions such as picking, packing, storage, shipping, and distribution. It is a vital building block in managing warehouse operations. The dimensioning system enhances storage density by providing accurate measurement data, which helps place items in locations that make warehouses as compact as possible.

Designed for conveyors and other automation machinery, dimensioning systems assess design precision based on dimensions such as height, breadth, width, and weight of the products. High-speed print and apply shipping systems quickly scan, weigh, and determine dimensions, and print and apply carton shipping labels in no time, for quick and easy shipments.

Shipping a truckload or cubing out pallets can save considerable time and effort for businesses with exact dimensions in hand. Precise, transparent measurement reduces unnecessary costs, thus transforming dimensioning and weighing systems into profitability drivers.





Traditional Vs. Automated Dimensioning



Conventional methods of measuring products, packages, and pallets using a tape and ruler have their limitations. They are time-consuming, prone to errors, and workforce intensive, causing delays and damages, increasing quality costs, and affecting productivity.

Automating the dimensioning process gets rid of these issues, quickly measures the SKUs, and uses the spaces resourcefully. Dimensioning systems simplify and hasten warehouse functionalities, processes, and procedures to redress operational costs and overheads. They also thwart issues that inhibit warehouses from fulfilling customer orders, especially in cases where the order is relatively small or too large.

For instance, a truly cutting-edge solution would enable you with the technology firepower to

measure cuboids with millimetre accuracy. An advanced vision-based solution would calculate the length, breadth, and height of objects in most lighting conditions - in less than a second!

After all, dimensioning systems are powerful tools that integrate innovations such as vertical lift systems, pick-to-light systems, and automated guided vehicles to enhance supply chain functionalities and contribute to higher profits. Reducing carbon footprint and wastage, automated dimensioning reassures greater warehouse sustainability by managing records electronically, identifying best packaging solutions, and reducing waste on boxes, corrugate, dunnage, and packing materials. They help in saving the environment and its associated costs.





What are Dimensioning and Weighing systems?



Dimensioning and weighing systems leverage the latest in sensing technology viz., ultrasound, lasers, vision/ Charge–Coupled Device (CCD) cameras, and infrared light to scan the height, breadth, width, and weight of a product

These sensors, combined with 2D cameras, bar code scanning systems, label printers, and dynamic or static weighing systems, comprise a complete turn key dimensioning, weighing, and tracking system. They capture and create a complete record of dimensions, characteristics, and freight properties of shipments in the warehouse.

The dimensional information collected by these systems is electronically stored and exported automatically to Warehouse Management Systems (WMS), where it can be utilized to create and deliver value. While most data transfer solutions are generic and are compatible with computerized warehouse systems, some need to be customized to fit specific application requirements. Quick and straight forward, automated dimensioning systems have become a vital element in the process of building dimensioning equipment.



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Dimensioning Equipments

State of the art, automated dimensioning and weighing equipment help gauge the height, weight, breadth, and width accurately without compromising the throughput or the delivery schedules. Companies can realize enormous savings if they leverage automated dimensioning for outbound freight as part of the shipping and fulfillment process.

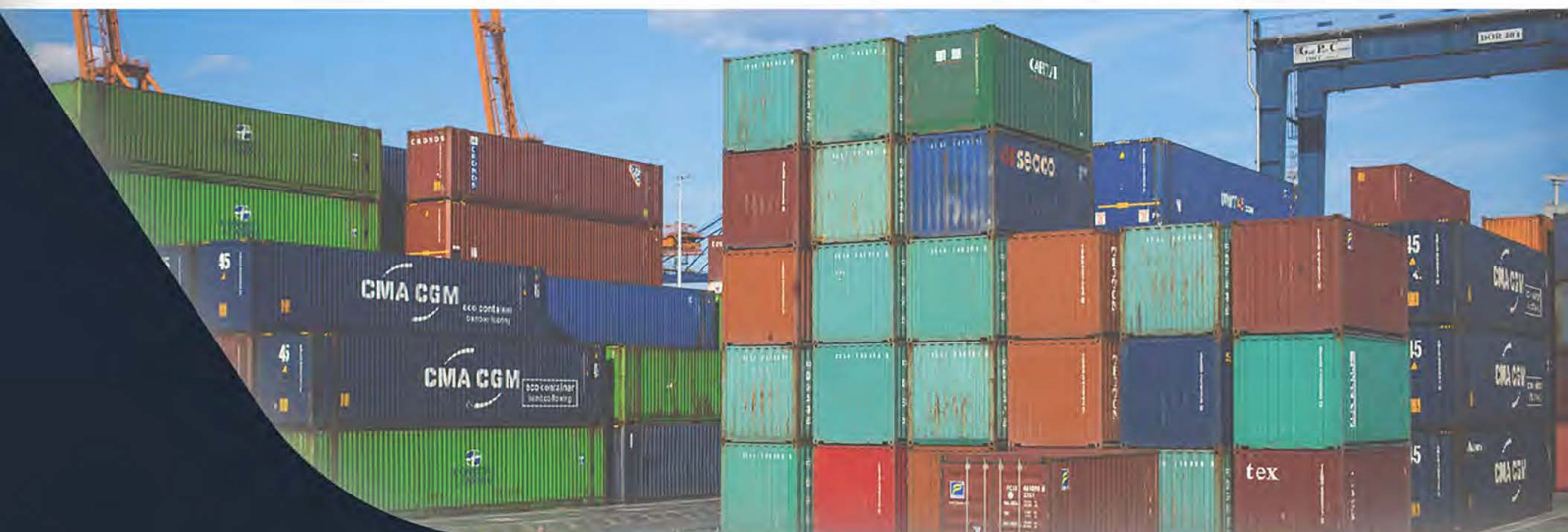
Warehouses must invest in dimensioning equipment that suits the facility's unique purpose, characteristics, and budget. They can choose between measuring equipment for small parcels, portable cubing and weighing work stations, high-speed, in-line cubing machines for automated sort facilities, and large static systems to quantify the dimensions and weights of larger parcels and palletized loads.

Types of Dimensioning Equipment

Large Freight Dimensioners

Predominantly used in the shipping and freight forwarding industry, the pallet dimensioners or large freight dimensioners are large machines that provide accurate measurements of palletized or crated freight. With the ability to operate in the toughest of conditions, they enable simple data management functionalities with seamless integration into existing shipping and Warehouse Management Systems (WMS).

They are widely used in pick/pack operations of outbound shipping and at receiving areas of hubs and terminals in freight carriers.





Package Dimensioners

Also known as parcel dimensioners, these dynamic, in-motion equipment measure individual boxes, cartons, and packages of various shapes and sizes in warehouses and distribution centers. They are added to dynamic conveyors and sorting systems where packages are distributed in high volumes to multiple locations based on the weight and dimension. Increasing throughput and reducing operating costs, these dynamic dimensioner operations are similar to larger dimensioners and can be deployed as stand-alone units or as parts of larger systems.





Top five benefits of dimensioning and weighing

Investing in an excellent dimensioning and weighing system offers numerous advantages to businesses. Read below to know the top five benefits of dimensioning and weighing.



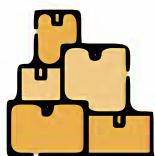
Reduces inaccuracy in shipping costs

Knowing the precise measurements of weights can enable businesses to determine the accurate shipping cost. This knowledge assists companies to offer better pricing to customers.

Today many carriers and shipping businesses bill their suppliers, vendors, and customers based on dimensions and weight. Therefore exact measurement of weight, height, breadth, and width is imperative to calculate the freight charge.

Accurate dimensional data helps businesses decrease shipping expenses and avoid chargebacks from carriers because of incorrect dimension calculations and erroneous freight charges



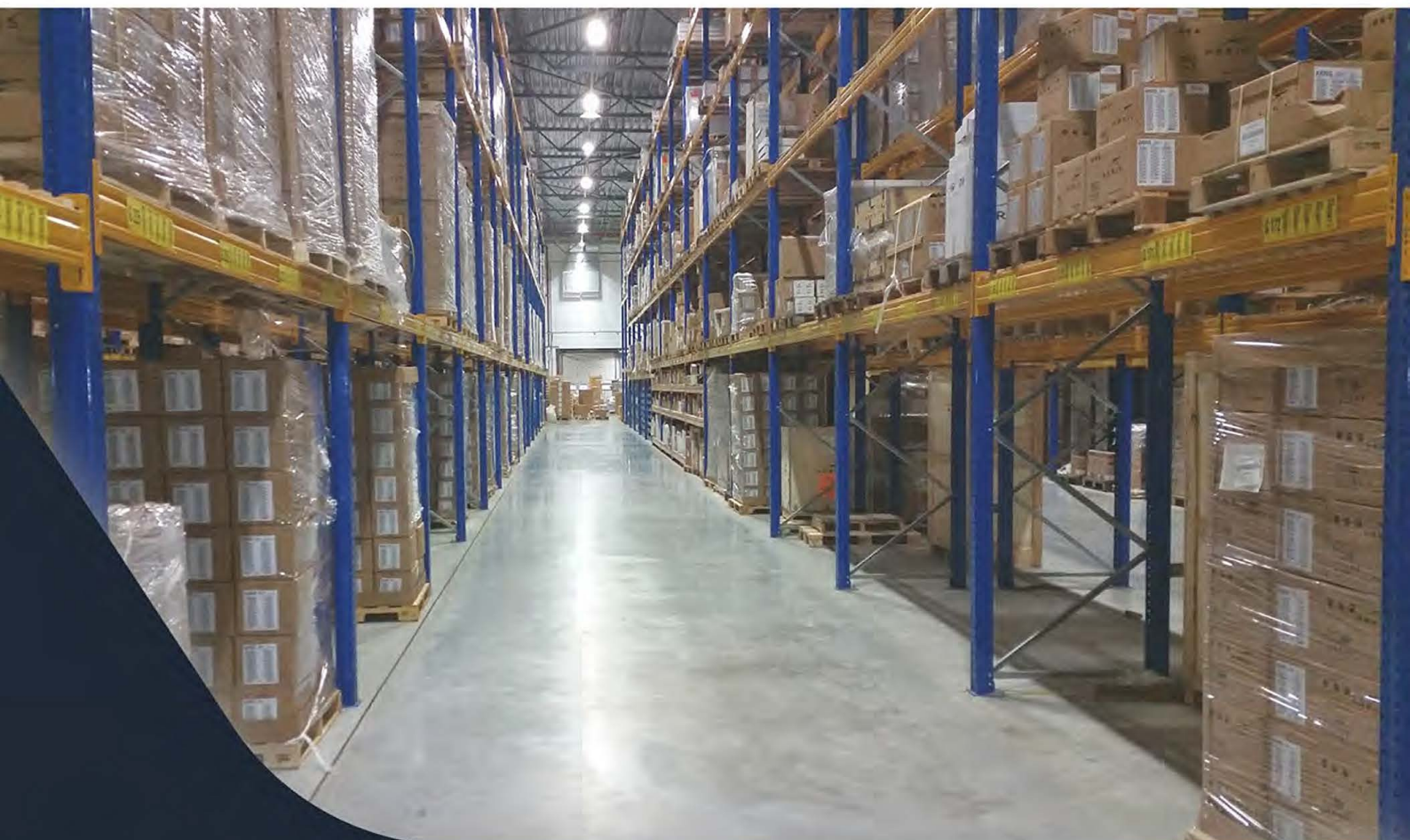


Simplifies slotting

Slotting is the process of organizing stock in the most compact, efficient, and optimized manner in a warehouse or distribution center. Distinctive spaces are slotted out to items based on their size, weight, perishability, and sales potential.

Dimensioning helps improve the slotting process by making it simple and systematic. Suppose the warehouse staff knew the exact dimensions, weight, and characteristics of the items in the package. In that case, they could ensure the ideal placement of the product so that it is appropriately handled without causing damages.

Dimensioning helps the slotting system recommend the most advantageous slot for the products without any hassle or errors. When the items are placed neatly and aligned optimally for pickup, it becomes relatively easy to locate and ship them, saving much time, effort, and cost.





Improves cartonization

Cartonization appraises the items ordered to decide the amount and size of the packaging carton needed. The cartonization function evaluates the combination of multiple items into a single carton.

Dimensioning improves cartonization by saving time and effort.



The weight, height, length, and width of each item help in determining the best way to pack each carton. Warehouse staff need not waste effort and delay delivery by trying different box sizes and numbers for the products. Dimensioning also reduces unnecessary filling of air and dunnage by choosing the right sized packaging.



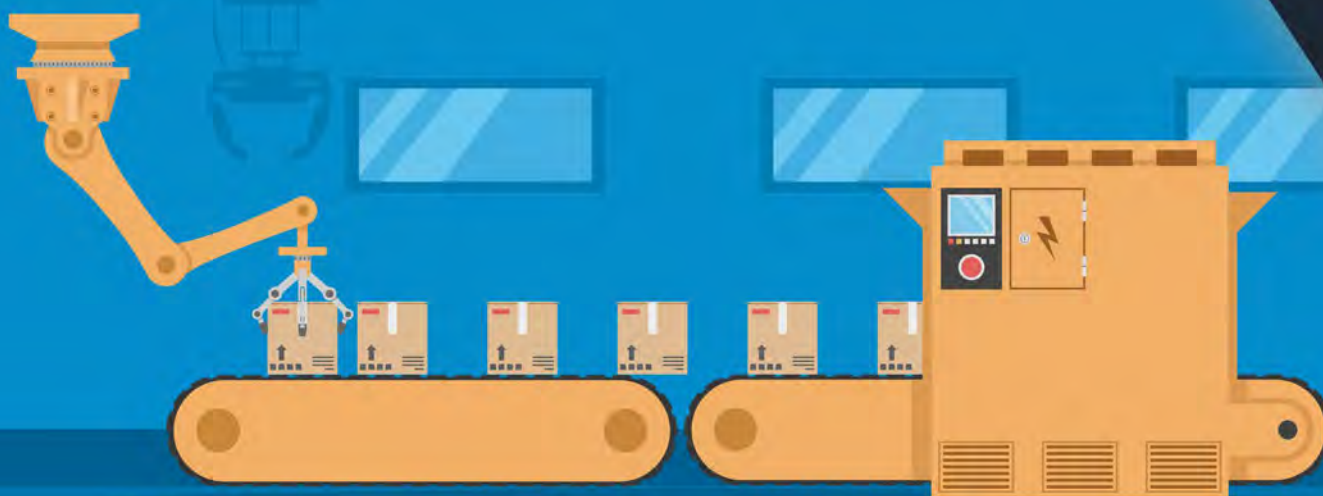
Assists capacity planning

Central to inventory planning and control, capacity planning plays an imperative role in warehouses with space constraints. It helps companies reduce fulfillment costs, minimize picking time, and optimize available space.

Dimensioning inventory assists warehouses in organizing or reorganizing the existing space or planning the shift to a new facility. Possessing precise weights and dimensions helps in specifying the exact pallet racking needed. Once the warehouse manager measures the weight, height, length, and width of each item and cartonizes them, then future capacity planning becomes a breeze.

Another laborious capacity planning process involves managing the number of bulk pick locations. Average and peak inventory based on cubic measurements should form the basis to accurately decide and plan the placements.





Boosts quality control

Guaranteeing the quality of orders that are to be delivered is an important responsibility of the order fulfillment function. Quality control plays a critical role in impacting warehouse efficiency by preventing damaged items from reaching the customers, improving order accuracy, and reducing returns and associated costs.

Dimensioning the products helps to identify prima facie defects in outbound and inbound shipments. When the weight, height, width, and breadth are not accurately measured, the product cannot be effectively checked for quality and immediately remedied or replaced.

Saving time on visual checks, dimensioning fastens the receiving and inspection process. Thus automated measurement averts unnecessary return cost, labor, and wrong shipments due to inadequate quality checks.



Conclusion

Without proper dimensioning and weighing systems, even the most advanced, innovative AI and ML-enabled robots and systems will not be able to function to its fullest potential. Accurate dimensions and weight measurements are an essential factor in controlling costs and driving profits. Hence installing robust, world-class dimensional systems are crucial for effective, cost-efficient, and profitable warehouse management.

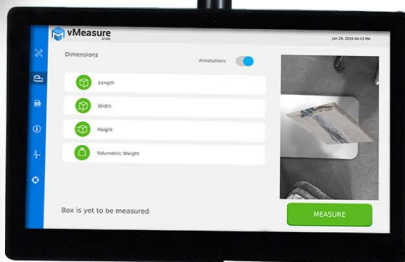




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e-con Systems™

VisAI Labs was founded in 2018 by an eclectic group of engineers and industry experts. It is incubated by e-con systems, one of the largest embedded camera manufacturers in the world.

Combined with the 20+ years of Embedded systems experience, we are always researching and working on cutting-edge AI technology.



VisAI Labs

VisAI Labs aim to become one of the world's largest Edge-AI and Computer Vision Product Development Experts in the world. We accelerate real-world adoption of computer vision applications by removing the chaff from the wheat. We provide a practical approach to clients, led by engineers and experts - knowledgeable on edge ai and computer vision.

Our expertise across various AI hardware platforms, extensive smart-camera integration experience, proprietary CV SDKs for accelerated solution development, and an extensive set of curated edge-optimized ML algorithms for faster solution deployment

Want to reduce costs and drive profitability



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We will be happy to help you with your unique dimensioning needs!