



ICA M INDUSTRIAL
INTELLIGENT SPACE SOLUTIONS

SILO^{Plus}, THE MULTI-COLUMN VERTICAL LIFT SYSTEM FOR ORDER PICKING

With its high performance, SILO^{Plus} is the ideal solution for rapid order processing with a higher picking rate resulting in increasing order turnover.

SILO^{Plus}

A FAST ORDER-PICKING SYSTEM



THE VERY BEST PERFORMANCE AND PRODUCTIVITY

SILO^{Plus} is a **multi-column Vertical Lift System** with shifting tray technology designed for the **storage and high-frequency picking of light loads**.

Perfect in situations where high throughput is essential, SILO^{Plus} ticks all the **boxes and allows for faster order fulfilment and consolidation**.

Thanks to variable sizing options for the trays (both in terms of dimensions and load capacity), and exclusive handling technology, SILO^{Plus} is able to offer the **highest level of operational performance**. Incredibly fast order picking, while maintaining the highest levels of quality control, ensures **maximum productivity and the best possible flow of materials within the warehouse**.



BENEFITS AT A GLANCE

- Shorter order cycle times and faster access to materials
- Best price / storage capacity ratio (€/m³)
- Optimized material flow
- High levels of productivity in the order picking processes
- Maximum use of both vertical and horizontal space

SAFETY, COMFORT AND PRODUCTIVITY

The vertical SILO^{Plus} storage system operates according to the “goods-to-person” picking principle: the required materials are automatically taken to the **access opening positioned at an ergonomic height**, where a warehouse operator can retrieve or store items.

SILO^{Plus} holds trays stacked vertically in two columns on the front and back of the storage system, which are both served by a central vertical shift extractor system. Equipped with a retrieval device, the extractor selects the relevant tray, carries it to the access opening and then returns it to its location within the structure.

Operational of the SILO^{Plus} storage system can be accomplished using an **incorporated PC, located adjacent to the access opening**, or via **any mobile device on which the ICAM ICON™** vertical storage system management software has been installed.

Multi-ray photoelectric light curtains and an automatic shutter door allow the warehouse operator **to work in complete safety** during handling operations at the access opening. **Emergency push buttons** on the front of the storage system enable the machine to be stopped immediately at any time.

Multiple side-by-side access openings ensure **continuity, speed and maximum performance**: as the operator retrieves or stores goods in one access opening the shuttle continues with its next handling mission. In this way, the warehouse operator is presented with the next tray in the adjacent access opening with zero waiting time.



FLEXIBILITY AND VERSATILITY: THE PROCESS- ORIENTATED SOLUTION

The ability to perfectly organise items within each tray enables the available space in the storage system to be exploited to the full, providing a high level of accuracy and reducing access times.

The trays are available in four different sizes (WxD: 853x612 / 1,253x612 / 653x802 / 1,253x802 mm - 33.6x24.1 / 49.3x24.1 / 25.7x31.6 / 49.3x31.6 inches) and with **a maximum capacity of 100 kg** (221 lbs) they are designed to be filled with Euro standard plastic boxes and containers. The boxes, which can be easily removed and carried around, respond perfectly to the storage and handling requirements of light-weight materials and small items and are designed to facilitate the flow of materials within the warehouse. Each tray can also be configured using tray separators and dividers, which are easily modified according to the size or quantity of the stored goods.



■ LxP 653x802 mm

■ LxP 1,253x802 mm



■ LxP 1,253x612 mm



■ LxP 853x612 mm



IDEAL / TYPICAL APPLICATIONS

- Order picking
- Order consolidation
- Buffer storage (Line Feeding)

HIGH PRODUCTIVITY AND MINIMUM FOOTPRINT

Thanks to its vertical shift system which operates along three axes, vertical (Y), horizontal (X) and tray storage and retrieval (Z), SILO^{Plus} is able to exploit every inch of available space, not only vertically but also horizontally, allowing for the creation of **storage systems up to 15 metres (49.2 feet) high and 6.5 metres (21.6 feet) wide.**

Its modular design enables SILO^{Plus} to be configured **by linking up to 7 storage columns.**

This combination of enhanced usage of space, high performance and flexible storage solutions make SILO^{Plus} a one of a kind storage system.

FROM
2
COLUMNS



TO
7
COLUMNS

■ TECHNICAL DATA

TRAY	METRIC SYSTEM	IMPERIAL SYSTEM
Maximum load	100 kg	221 lbs
Standard configurations with Euro standard boxes (WxD) *	853x612 / 1,253x612 / 653x802 / 1,253x802 mm	33.6x24.1 / 49.3x24.1 / 25.7x31.6 / 49.3x31.6 inches
Height	41 mm	1.6 inches
Maximum loading height	450 mm for tray equipped with Euro standard boxes 675 mm for tray equipped with separators and dividers	17.7 inches for tray equipped with Euro standard boxes 26.6 inches for tray equipped with separators and dividers
Incremental positioning pitch	25 mm for fixed configuration 50 mm for automatic configuration	1.0 inches for fixed configuration 2.0 inches for automatic configuration
Minimum tray spacing	75 mm	3.0 inches

STORAGE SYSTEM		
Maximum load capacity per column	60 t	132,278 lbs
Width	2,335 ÷ 6,585 mm	7.7 ÷ 21.6 feet
Depth	2,421 ÷ 2,991 mm	7.9 ÷ 9.8 feet
Height	2,800 ÷ 15,000 mm	9.1 ÷ 49.2 feet
No. of columns	2 ÷ 7	2 ÷ 7
Module height pitch	100 mm	0.3 feet
Working environment operating temperature	0 ÷ 40° C	32 ÷ 104 F
Relative humidity**	50 ÷ 85%	50 ÷ 85%

MAX. SPEED		
Vertical (Y axis)	1.4 m/s	55.1 inch/s
Horizontal (X axis)	1.7 m/s	66.9 inch/s
Tray storage or retrieval (Z axis)	0.5 m/s	19.7 inch/s

* Alternatively, if Euro-Standard boxes are not suitable, separators and dividers allow the use of additional trays with a width ranging from 653÷1,253 mm (25.7÷ 49.3 inches) with a pitch of 100 mm (3.9 inches) and depth of 612 / 707 / 802 mm (24.0 / 27.8 / 31.6 inches)

** On request it is possible to equip the storage system with components able to withstanding climatic conditions which exceed these limits

■ WIDTH OF THE MACHINE BASED ON QUANTITY AND DIMENSIONS OF THE COLUMNS

		NO. OF COLUMNS					
		2	3	4	5	6	7
TRAY WIDTH	653 mm 25.7 inches	2,335 mm 7.7 feet	3,185 mm 10.4 feet	4,035 mm 13.2 feet	4,885 mm 16.0 feet	5,735 mm 18.8 feet	6,585 mm 21.6 feet
	853 mm 33.6 inches	2,735 mm 9 feet	3,785 mm 12.4 feet	4,835 mm 15.9 feet	5,885 mm 19.3 feet	- -	- -
	1,253 mm 49.3 inches	3,535 mm 11.6 feet	4,985 mm 16.3 feet	6,435 mm 21.1 feet	- -	- -	- -

PRECISION, EFFICIENCY AND PROFITABILITY THROUGH INTELLIGENT STOCK MANAGEMENT

New standards of usability, accuracy and productivity are achieved with the available command and inventory control options.

Everything is under control with **ICON™**. This **web-based software**, designed and developed entirely by ICAM, enables the management and control of the entire range of ICAM storage systems and much more.

Designed in accordance with the latest technological standards, ICON™ meets the storage and picking needs of the most important commercial and industrial sectors, providing **greater flexibility of interface with the most popular WMS and ERP management software**.

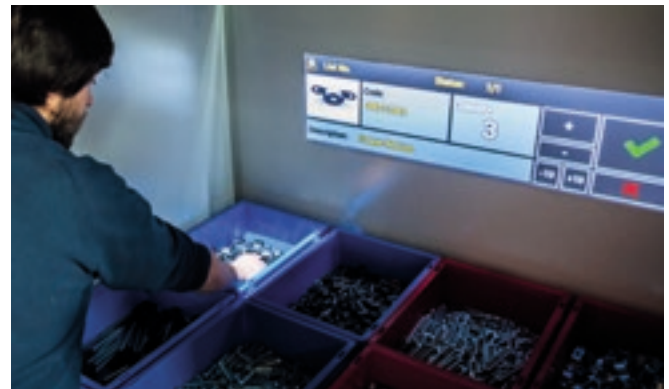
Designed with the Microsoft.NET framework 4.5, ICON™ was developed in C# with the development tools for Visual Studio.

The PC is Microsoft Windows 10 embedded and equipped with a network interface, a software package developed by ICAM, and a database server program (SQL Server Express Edition).



KEY FEATURES AT A GLANCE

- Touch screen console
- Windows-based intuitive graphic interface
- Modular structure and versatile options
- Multiple inventory management strategies
- Multilingual and multiple-machine management
- Quick response times and optimized processing pathways
- Assignment of specific authorization profiles for individual users



IRIDE™, the innovative interactive control system* makes storage and retrieval faster, more accurate and more intuitive using a digital environment, fully-integrated with both the storage system itself and our management software, ICON™ and has 4 main functions:

- **Light Picking Guide**
Guidance on picking operations through coloured light beams that identify the right locations containing the material to manage.
- **Head-up Digital Dashboard**
Digital dashboard with relevant handling information brought directly into the operator's line of sight.
- **Adaptive Interior Lightning**
Integrated lighting system and light signaling of alarm situations (activation of safety barriers, downtime, etc...).
- **Active Control**
Feature, which allows the operator to interact in real time with the information, projected onto the 'Head-up Digital Dashboard', without needing to change workstation.

*IRIDE is not available for trays with depth of 612 mm (24.1 inches).



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