

Automated solutions

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# Shuttle System

Greater storage capacity and speed in order picking



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# Shuttle System

This automated storage and retrieval system (AS/RS) increases storage density and speed in order picking, boosting productivity.

On each storage level, a motorised shuttle deposits and removes totes or boxes by means of telescopic arms. Lifts move the goods to the lower level. Once there, conveyors move the totes to the pick stations, where operators put together orders.

Mecalux's Easy WMS warehouse management system orchestrates the operations, optimising the movements of the totes. The software controls the location of the goods at all times.



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## Benefits:



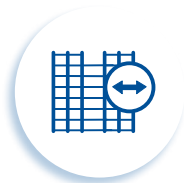
### **Raised productivity**

Automation and the goods-to-person method improve throughput in storage and order picking tasks.



### **Optimisation of available surface area**

The racking can reach up to 14.5 m tall and 70 m long, providing considerable storage capacity.



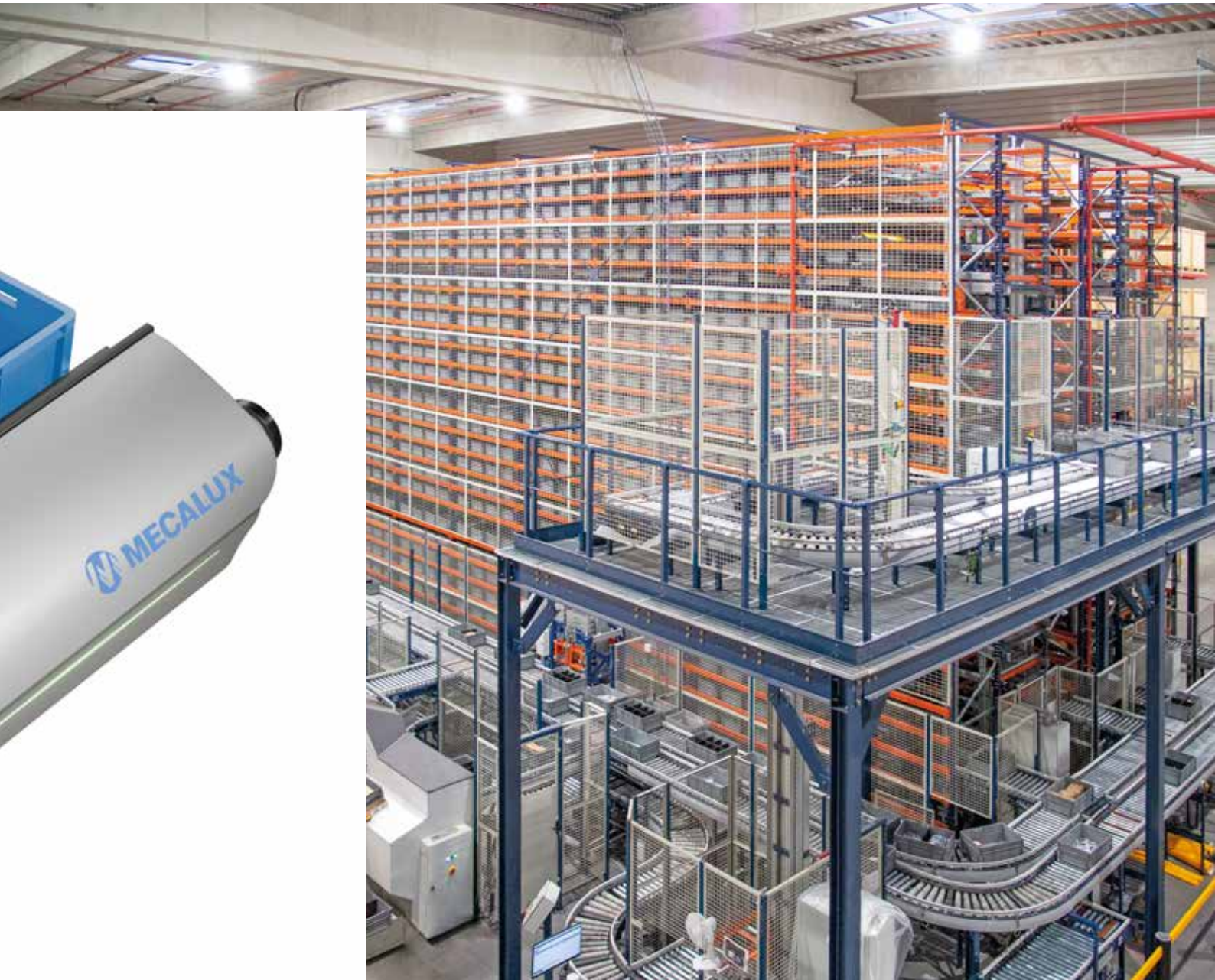
### **Streamlined goods-in/goods-out**

The electric shuttles foster a higher number of movements per hour.



### **Perpetual (real-time) inventory**

The Easy WMS warehouse management system controls stock and product traceability.



**Improved order picking accuracy**

Errors resulting from manual management are eliminated.



**Continuous flow**

The Shuttle System can operate non-stop – 24 hours a day.



**Modular, scalable solution**

Aisles can be added on to the system based on logistics needs.



**Easy maintenance**

The AS/RS features an area for performing preventive maintenance.

# Shuttle System features



The motor-driven shuttle travels along the rail moving the goods to the lifts at a **speed of 4 m**,

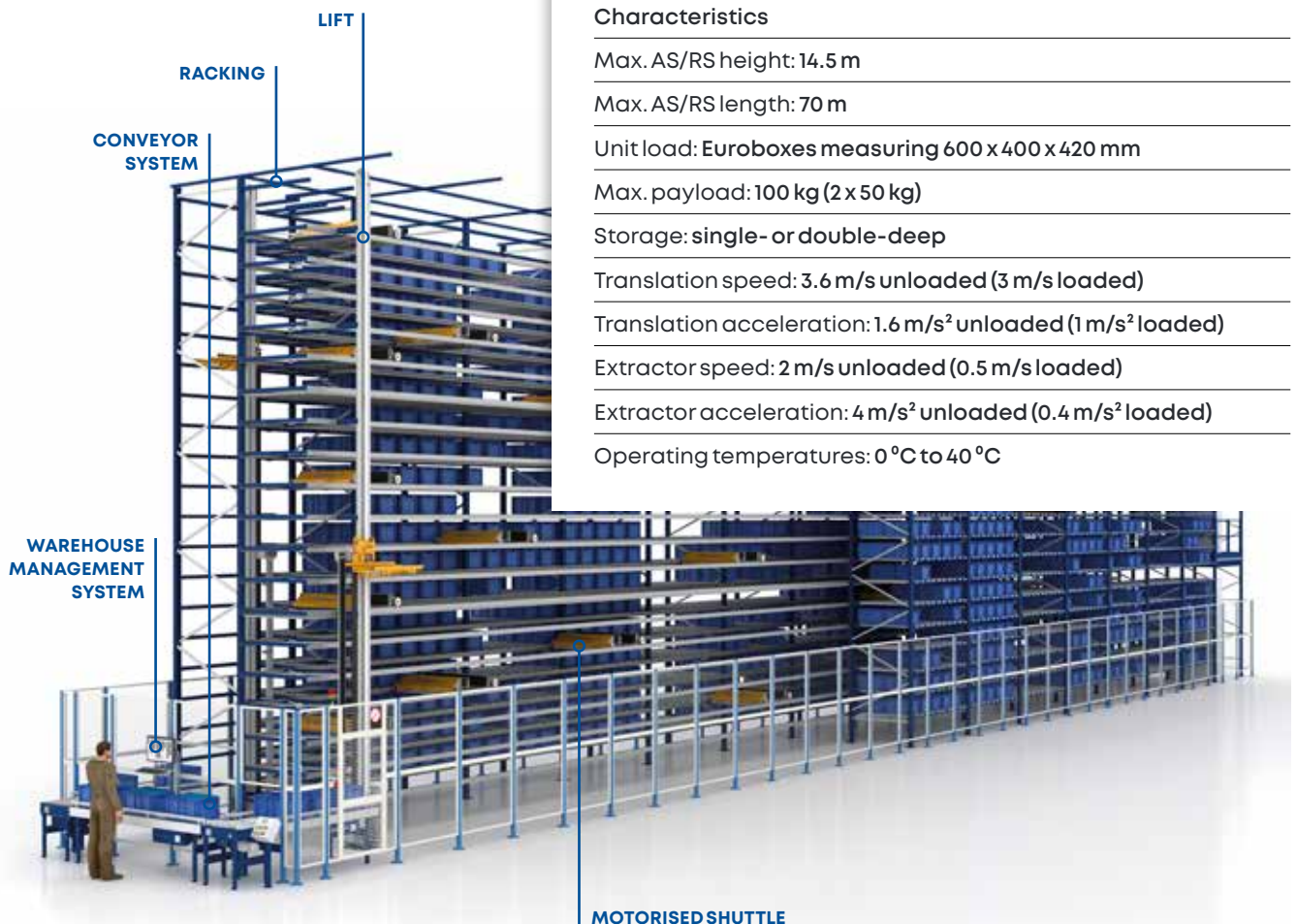
Thanks to its **sensors**, the electric shuttle detects its position and moves to the assigned location with full autonomy.

The system incorporates **safety elements** that protect both the operators working in the facility and the goods stored.

The operation of the shuttle is **controlled by an onboard PLC**, which receives instructions to execute the translation and extraction movements.

The shuttle's telescopic arms perform **storage and retrieval operations** in single- or double-deep racking.

On each level, the motorised shuttle can move **up to 2 totes, each weighing 50 kg** maximum.



## Characteristics

Max. AS/RS height: 14.5 m

Max. AS/RS length: 70 m

Unit load: Euroboxes measuring 600 x 400 x 420 mm

Max. payload: 100 kg (2 x 50 kg)

Storage: single- or double-deep

Translation speed: 3.6 m/s unloaded (3 m/s loaded)

Translation acceleration: 1.6 m/s<sup>2</sup> unloaded (1 m/s<sup>2</sup> loaded)

Extractor speed: 2 m/s unloaded (0.5 m/s loaded)

Extractor acceleration: 4 m/s<sup>2</sup> unloaded (0.4 m/s<sup>2</sup> loaded)

Operating temperatures: 0 °C to 40 °C

# Operation



1

The shuttle receives an order and travels to the assigned position to retrieve a tote from the racking using its telescopic arms.



2

Once the tote is in the cradle, the shuttle moves to the lift in charge of lowering the goods to the bottom level, where the outbound conveyors are located.



3

The conveyor system transfers the tote to the pick station. There, the operator receives instructions from the WMS software on filling the order.



4

Once picking has finished, the tote returns to the AS/RS or is sent to another workstation. The completed order is moved to the consolidation area or directly to the shipping zone.

# Large-scale order picking

The Shuttle System supports different pick station configurations.

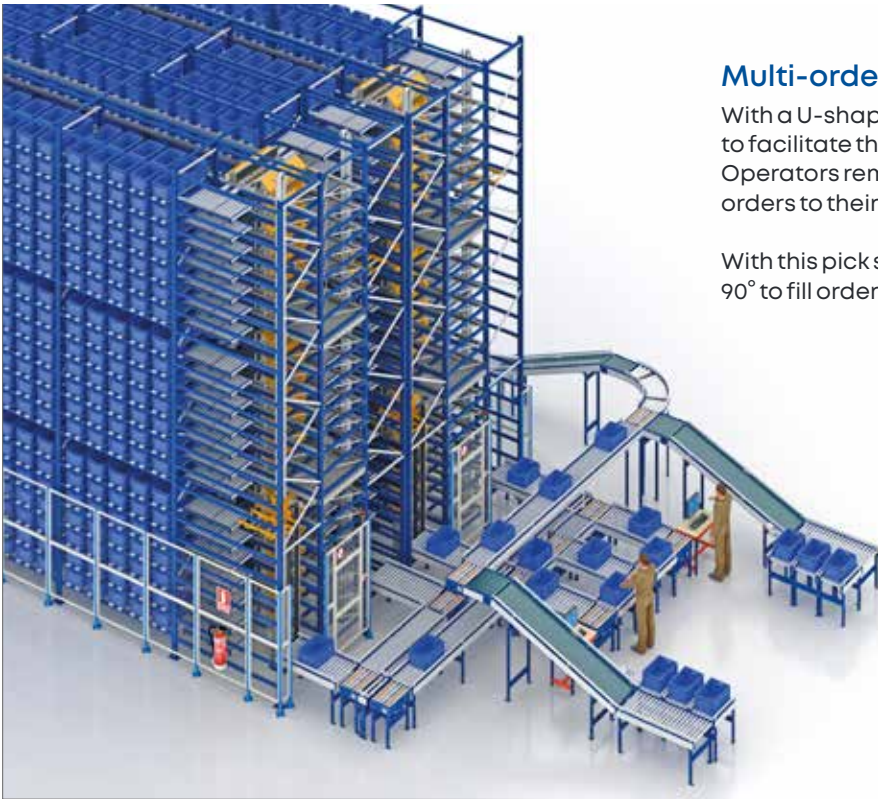


## Traditional pick station

This solution — ideal for basic order picking — is based on a U-shaped conveyor system located at the front or on the side of the AS/RS.

Operators remove items from the totes they receive from the AS/RS and sort them in the bins behind them. With this method, operators can pick 60 to 120 order lines/hour (depending on the dimensions of the totes) to fill orders of the same SKU.





### Multi-order pick station

With a U-shaped conveyor, the AS/RS is designed to facilitate the picking of several orders at once. Operators remove items from the totes and prepare orders to their right and/or left.

With this pick station, operators only have to move 90° to fill orders. Thus, they can pick 90 to 165 lines/hour.

### High-performance pick station

This solution enables operators to prepare larger volumes of orders simultaneously and ergonomically. A pick-to-light system shows operators how many items to remove from each tote and where to place them. This minimises the possibility of errors during the process.

A high-performance pick station allows operators to fill a total of 6 orders at a time, reaching throughputs of up to 1,000 picks/hour.





The Shuttle System is suitable for companies in any industry. It is especially advantageous for those that store many small products in a limited space and that need to boost order picking productivity in their logistics facilities.

**This system facilitates the consolidation and sequencing of prepared orders and the supply of materials to production lines.**



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