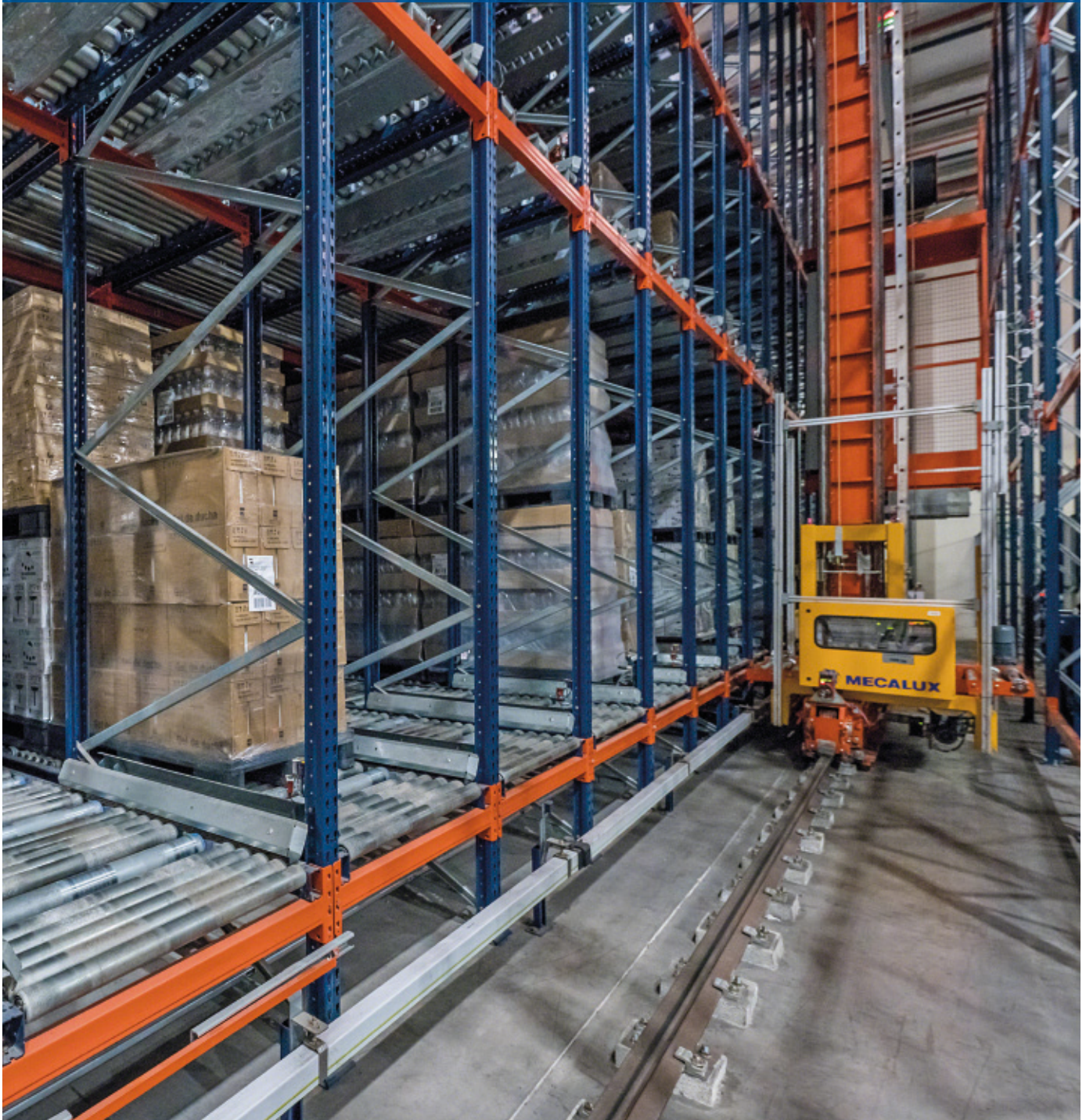




Case study: Laboratorios Maverick

Robotised warehouse with more than 1,000 pallet dispatches a day

Location: Spain



By being fully-automated operations-wise, Laboratorios Maverick's clad-rack warehouse was able to cut order prep and delivery times by half, optimising each lorry's load volume. The warehouse, set up next to the production centre the company has in Tarragona, is fitted with cutting-edge technology and runs the Mecalux Easy WMS.

Laboratorios Maverick (Ubesol Group)

Laboratorios Maverick, founded in 1991, is a specialist in the development and manufacture of hygiene and personal care products.

Since 1995, it has worked as an exclusive Mercadona supplier and makes a huge variety of eco-friendly, socially responsible products, including: bath gels, deodorants, hand soaps, hair-removal and shaving products, intimate hygiene, other hygiene and hair care products, as well as baby care products. The company has two large manufacturing centres, one in San Fernando de Henares (Madrid) and another in Ulldecona (Tarragona).

Since Laboratorios Maverick's 2006 merger into the Ubesol Group, its yearly sales volume has multiplied at a constant rate, surpassing the 2,000-million-euro turnover mark. Continued growth has forced the Ubesol Group to modernise the Tarragona area plant and warehouse of Laboratorios Maverick, to fulfil consumer demands and maintain its position in an ever globalising, ever competitive market. In 2007, Ubesol Group chose Mecalux to build an automated clad-rack warehouse with seven aisles, meaning the group quadrupled its Ubesol storage capacity, located in Atzeneta d'Abaida (Valencia). A few years later, in 2014, it was Laboratorios Maverick's turn, when it opened its roboticised logistics warehouse, where it sharpened its production processes' competitive edge and efficiency.





Combined solutions

Although the highlight of Laboratorios Maverick's facility is the massive automated clad-rack warehouse, other storage solutions were also installed that are just as essential for the whole logistics process to run smoothly:

1. **Automated clad-rack warehouse** for finished products.
2. **Pallet racks** for raw materials and highly-flammable products.
3. **Live pallet racking** run by a stacker crane allocated to prepared orders.
4. **Sequencing buffer** for pallets that must be restacked automatically to optimise the volumetric capacity of transport vehicles

In tandem, handling equipment was supplied (stacker cranes, pallet lifts, transfer cars, etc.) and the Easy WMS of Mecalux rolled out. *"The logistics centre is equipped with a computer system that runs 24-hours a day, all year round,"* explains Hugo Marante, departmental operations coordinator of Laboratorios Maverick. *"Data transmission flows through a sophisticated high-speed fibre-optics network and includes infrastructures that minimise downtimes,"* he adds.



Hugo Marante
Departmental Operations Coordinator
at Laboratorios Maverick

"Through this new warehouse, we automated our storage tasks and reduced the time we normally needed to prepare and distribute each order, all of which translates into better, more efficient logistics for our company."

Automated clad-rack warehouse

Finished product is stored here. As a clad-rack construction, the warehouse yields high capacity without losing access or speed while goods flow in and out. The company went with a compact storage system because its customer Mercadona works with very few SKUs, but an usually high number of each of these SKUs.

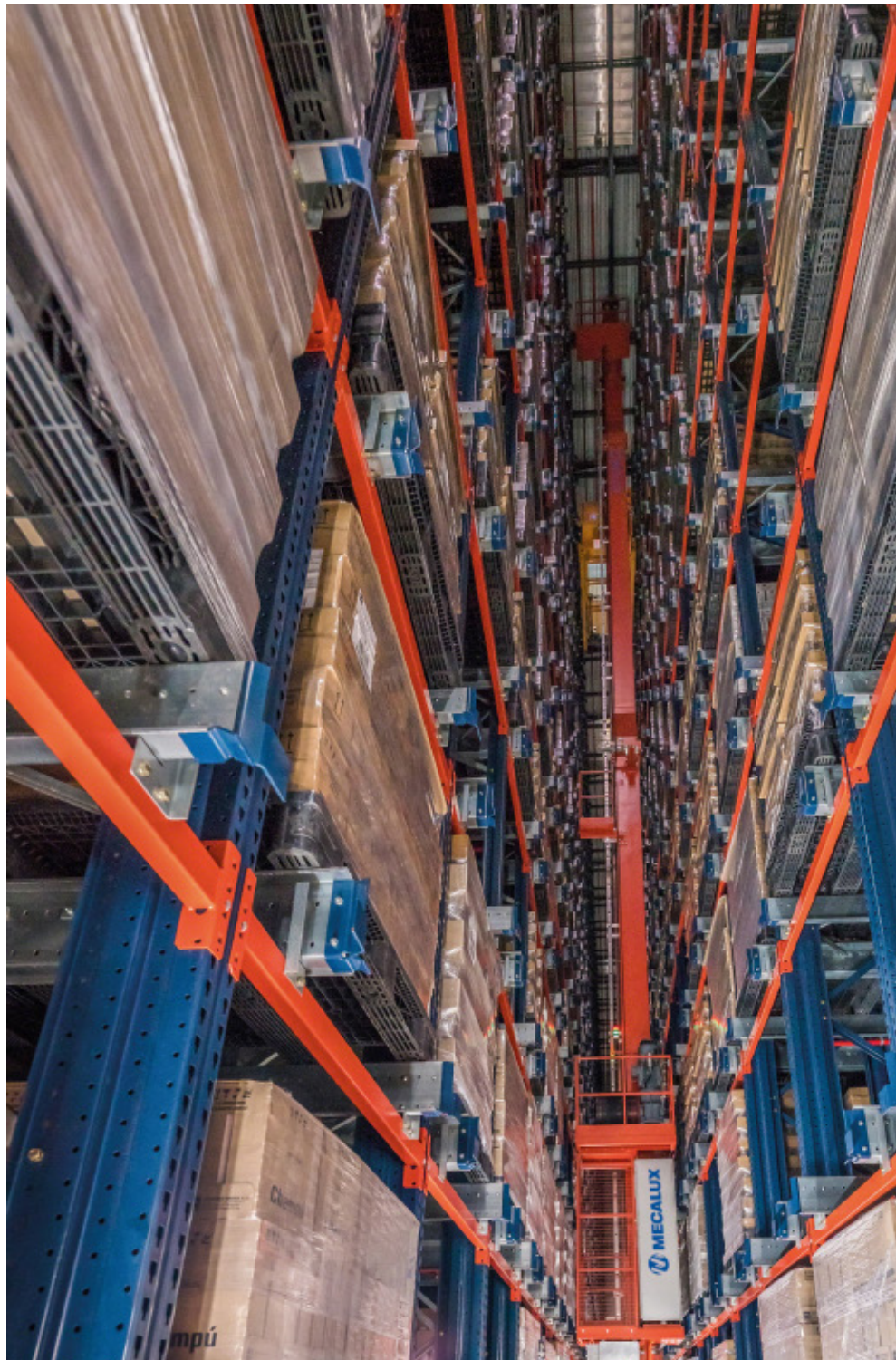
Palletised goods include bottled gels, shampoos and creams that are stored as per the ABC rotation criteria.

The warehouse fills a 3,878 m² area which adds to Laboratorios Maverick's already 33,000 m² large manufacturing centre. It is comprised of racks that stand 26.5 m high, with 14 different load levels for storage.

Inside the warehouse, three 70 m long aisles were enabled for a twin-mast MT3 stacker crane to run along. Each stacker crane, capable of 24 simultaneous combined-cycles each hour, is supplemented by a shuttle that transports pallets up to the open position in the aisle, as indicated by the Easy WMS warehouse management software.

According to Hugo Marante, *"to optimise the automated warehouses' operations, management systems were integrated into all processes (manufacturing, quality, storage and dispatch) in a single platform."*

The automated warehouse can receive and ship out 72 pallets of finished product per hour simultaneously





Pallet racks: raw materials and flammable products

Raw material to make products is stored next to the automated warehouse in some pallet racks, as well as packaging and auxiliary materials.

Another zone inside the manufacturing plant houses pallets filled with highly-flammable products, like aerosols used in deodorants and hair sprays. Laboratorios Maverick complies with the specific standards that certify that its work area, as well as the operation of the handling equipment, have been devised, utilised and maintained with respect to all safety criteria dealing with flammable products.

Overall, 45 blocks of pallet racks were installed, featuring fourteen 8 m high storage levels.



Sequencing buffer for the full-pallet stacker

The sequencing buffer, connected to the automated warehouse, is set between the standard pallet racks and some live pallet racks allocated to finished orders. It comprises a conveyor circuit and

functions as storage for pallets that must be stacked.

The sequencing buffer also receives pallets from the CPS (Chemical Product Storage), so these pallets can be stacked during order preparation.

Live pallet racking run by a stacker crane for finished orders

Here, the company houses finished orders waiting and ready to be shipped out. With three levels of storage, the live pallet racks can absorb up to 88 incoming pallets per hour flowing either from the sequencing buffer (conveyor circuit full pallet stacker), or the automated warehouse.

Easy WMS is tasked with managing pallet stacking sequences to optimise the transportation vehicle's cubic volume





The high-performance single-mast stacker crane with an onboard roller conveyor inserts pallets into the live pallet channels (on a 4% incline), which facilitates the pallets' gravity displacement from the higher to the lower part.

Live pallet racks offer precise product rotations thanks to the FIFO system (the first pallet inserted into the channel is the first to be extracted).

The side in which pallet inputs and outputs are done in the live pallet racks coincides

with the dispatch area. With this setup, lorries can be loaded directly from the racks without any need for pre-loading manoeuvres.

The Easy WMS combines pallets coming directly out of the automated warehouse with pallets in the sequencing buffer to make up orders and, by doing so, optimises lorry volumes. Grouping and sequencing goods for shipments according to their route, lorry, customer, delivery order and other variables reduces dispatch times.



The new warehouse means a single order can be prepared in just 30 minutes. This equals huge cuts in standard time usage and a consequential cost savings



Advantages for Laboratorios Maverick

- **More capacity in less space:** the automated warehouse offers the highest storage capacity possible in only 3,800 m².
- **30 minute orders:** the automation of logistics processes means Laboratorios Maverick can prepare an order in just a half an hour, cutting task times by more than half.
- **Efficient management:** the Easy WMS manages and organises all operations being carried out inside the warehouse, reducing logistics costs, minimising errors and raising the bar on efficiency and order preparation productivity. These benefits have led to the load volume optimisation of each transport vehicle.



Technical data

Pallet racks

Pallet size	800 x 1,200 mm
Max. pallet weight	1,000 kg
Racking height	8 m
Storage levels	4

Live pallet racks with stacker crane

Pallet size	600 x 800 mm
Max. weight four stacked pallets	1,250 kg
Racking height	9 m
Storage levels	3

Automated warehouse

Pallet size	800 x 1,200 mm
Max. pallet weight	1,000 kg
Racking height	26.5 m
Aisle length	70 m
Storage levels	14
No. of stacker cranes	3