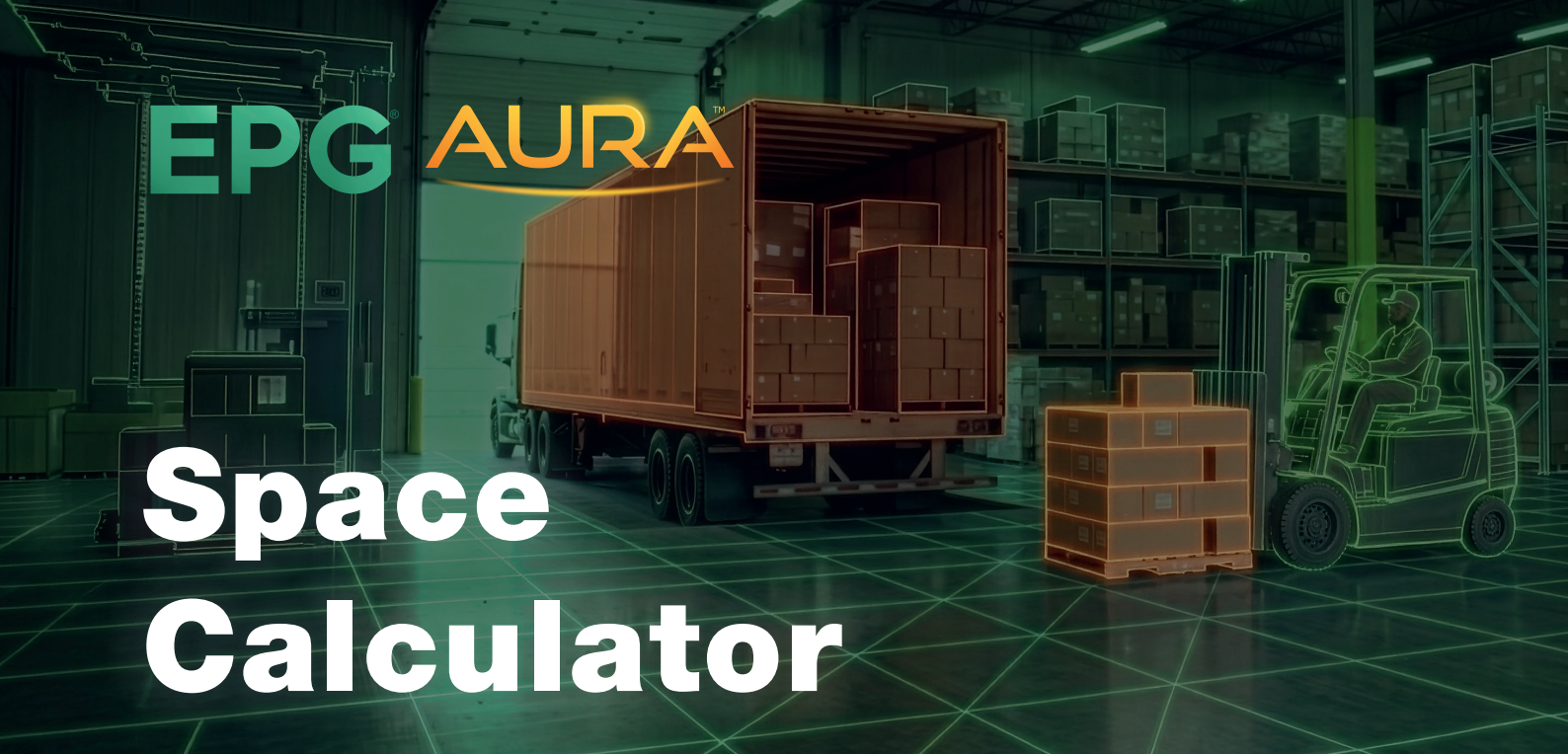


The background of the top section is a stylized illustration of a warehouse interior. It features a large orange truck with its back open, loaded with brown boxes. To the right, a yellow forklift is positioned next to a stack of boxes. The floor is marked with a green grid pattern. In the top left corner, the logo 'EPG' is in green and 'AURA' is in orange with a yellow swoosh underneath. The overall lighting is a mix of green and orange hues.

EPG AURA™

Space Calculator

Optimize Packaging, Palletization, and Loading

In logistics operations, the selection of the right packaging, load carrier, and transportation equipment, as well as the efficient utilization of pallets, cages, truck trailers, and ocean freight containers, directly impacts costs, material consumption, and process efficiency. Especially when dealing with diverse product portfolios, changing order structures, and high throughput volumes, rule-based decisions often result in unused space, poorly utilized transport capacity, and unnecessary costs.

As shipment diversity continues to increase, companies face growing pressure to make packaging, palletization, and loading decisions faster and with greater accuracy. Every underutilized carton, pallet, or loading space affects downstream processes and reduces the efficiency of transportation assets throughout the supply chain.

The EPG Space Calculator was developed specifically to address these challenges. The solution automatically calculates the optimal arrangement of products and packages within cartons, on load carriers, and inside transportation equipment. In doing so, it considers both physical product characteristics and operational constraints such as weight, stackability, axle load restrictions, weight distribution requirements, and exclusion rules for specific product combinations. This transforms what has traditionally been a rule-based or experience-driven planning activity into a data-driven optimization process for carton selection, pallet building, and load planning.

Placement Logic Based on Real Product Data

The Space Calculator combines heuristic 3D bin-packing algorithms with AI-supported decision logic to determine the optimal spatial arrangement of products and packages. The calculation takes into account dimensions, weight, stackability, rotation options, material characteristics, regulatory loading requirements, and defined handling rules.

Rather than relying on a rigid mathematical model, the underlying calculation logic is generated through AI based on business-specific requirements. Constraints such as permitted product combinations, exclusion rules, stacking sequences, or material-specific handling requirements can be described in natural language. Based on these inputs, the system creates a tailored optimization algorithm that performs calculations reliably, quickly, and transparently.

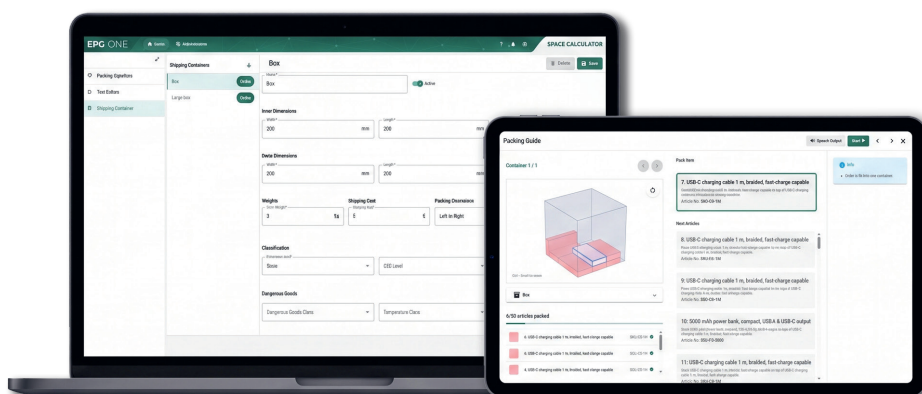
This approach makes it possible to model even highly complex packaging, palletization, and loading requirements without extensive mathematical modeling while allowing the logic to be adapted and refined as operational needs evolve.

Key Benefits at a Glance

- ✓ Optimal utilization of packaging materials and transportation assets
- ✓ Reduced packaging material consumption and empty space within shipments
- ✓ Faster decision-making in shipping and fulfillment processes
- ✓ Lower costs through the selection of the most suitable packaging and load carriers
- ✓ Greater process reliability across changing product assortments
- ✓ More sustainable transportation and shipping operations through reduced material usage
- ✓ Automatic consideration of regulatory and compliance requirements during loading

Typical Use Cases in Shipping and Fulfillment

- E-Commerce Orders with Changing Product Combinations**
 For each order, the system automatically determines the most suitable packaging configuration, maximizing volume utilization while minimizing packaging material consumption.
- Carton, Pallet, and Load Planning**
 The Space Calculator supports the optimal utilization of cartons, pallets, cages, truck trailers, and ocean freight containers.
- High-Volume Packing Operations**
 Packaging and loading decisions are made faster, more consistently, and with greater transparency, even in highly dynamic fulfillment environments.
- Products with Different Physical Requirements**
 Weight, stackability, rotation options, material properties, and exclusion rules are incorporated directly into the calculation process.
- Visually Guided Packing and Loading Processes**
 An interactive packing dialog provides step-by-step instructions for optimal product placement, both at packing stations and on mobile devices.
- Transportation Cost and Capacity Optimization**
 Packaging, pallets, and loading spaces can be aligned with available transportation capacity, equipment specifications, and operational constraints to maximize utilization and reduce costs.



Continuously Improve Efficiency During Operations

The value of the Space Calculator becomes particularly evident in environments where large numbers of diverse shipments must be processed under tight time constraints. Packaging, palletization, and loading decisions are executed consistently and transparently based on actual product data rather than individual experience.

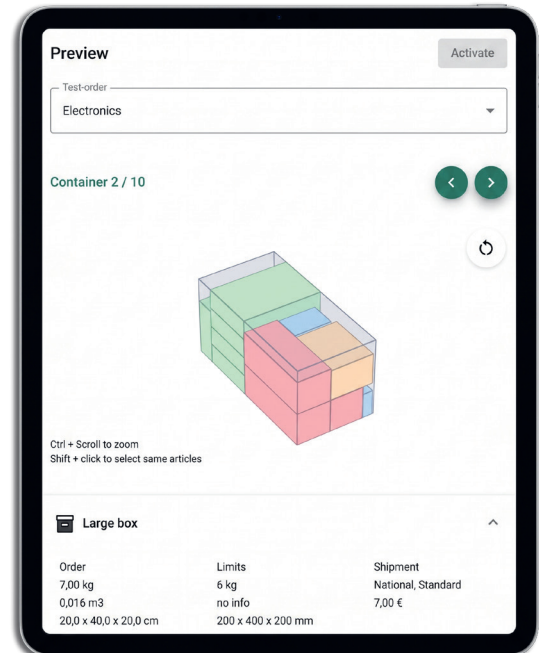
The solution also provides access to operational metrics that are often difficult to measure, including empty-space ratios per shipment, volume utilization rates, and packing efficiency across different order structures. These insights create additional opportunities for continuous optimization within shipping and fulfillment operations.

Seamless Integration into Existing Processes

The Space Calculator is designed as a modular service that can be integrated directly into existing warehouse management, order management, and shipping environments through standardized APIs.

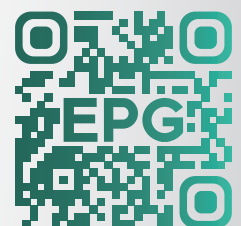
Calculations can be triggered at order entry, during picking operations, upon goods receipt, or directly at existing packing workstations. This allows organizations to maintain established process flows while significantly improving the accuracy of packaging decisions.

Thanks to its scalable architecture, the solution can be deployed in cloud environments as well as within existing on-premises system landscapes.



Get Started Now

The EPG Space Calculator is ideal for organizations seeking to improve packaging, palletization, and loading decisions, maximize transportation capacity utilization, and leverage physical space as a strategic efficiency driver throughout the entire fulfillment and shipping process. .



EPG AT A GLANCE:

POWERING LOGISTICS EXCELLENCE

EPG is a leading international provider of a comprehensive supply chain execution suite (EPG ONE™) and employs 1000+ people in 23 locations across the globe. The group of companies offers its more than 1,600 customers WMS, WCS, WFM, TMS and voice solutions for optimizing logistics processes – from manual to fully automated logistics environments.

EPG's solutions cover the entire supply chain: from warehouse and road to ground and cargo handling solutions at airports. Logistics consulting, cloud services, managed services, and logistics training in the company's own academy round off EPG's comprehensive range of solutions.



EPG IN NUMBERS



**MORE THAN
1,600 CUSTOMERS**

ON ALL CONTINENTS WORLDWIDE



>1,000

**EMPLOYEES WITH
DEEP LOGISTICS
KNOWLEDGE AND
INDUSTRY EXPERTISE**

OUR SOLUTIONS
ARE AVAILABLE IN
60+ LANGUAGES



LYDIA™ VOICE

FASTEST GROWING

VOICE SOLUTION IN THE WORLD
AND #1 VOICE SOLUTION FOR
ANDROID DEVICES

35+ YEARS
LOGISTICS EXPERIENCE



600,000+

**USERS ARE
WORKING DAILY WITH
EPG SOLUTIONS**

TOP 3

SUPPLY CHAIN
EXECUTION SUITE

WORLDWIDE

