

GFAFBTM

NGA Glass Fabricator Conference



THE FUTURE OF GLASS
FABRICATION HAPPENS HERE

JUN 14-17, 2026

CHICAGO

SMART FACTORIES & THE FUTURE OF GLASS FABRICATION

with founder of TSS Glass
Machinery Sales inc.



CLIFF GREEN



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GFAB™

NGA Glass Fabricator Conference

NGA

NATIONAL GLASS ASSOCIATION with GANA

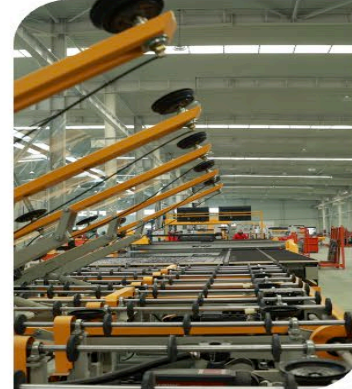
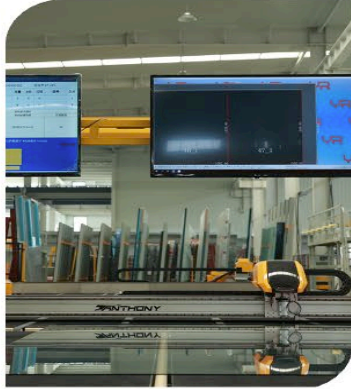
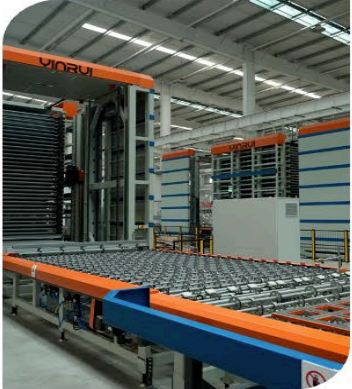
TSS YINRUI

GLASS MACHINERY SALES INC.

SPECIALIZING IN GLASS MACHINERY AND SUPPLIES

Building Smart Factory
for the Glass Industry

What can smart factories bring?



Increase production capacity

Reduce labor intensity,
Greatly improve production efficiency and optimization rate.

Improve product quality

Improve product quality,
Reduce production costs.

Increase satisfaction

Shorten product manufacturing cycle time and improve customer satisfaction.

Easy costing

Lean management,
Clear costing.

Enhance brand image

Strengthen the brand image,
Improve order acceptance and bargaining power.

Meet the development direction

To meet the development trend,
Take the lead in development.

ARCHITECTURE GLASS
建筑玻璃

PHOTOVOLTAIC GLASS
光伏玻璃

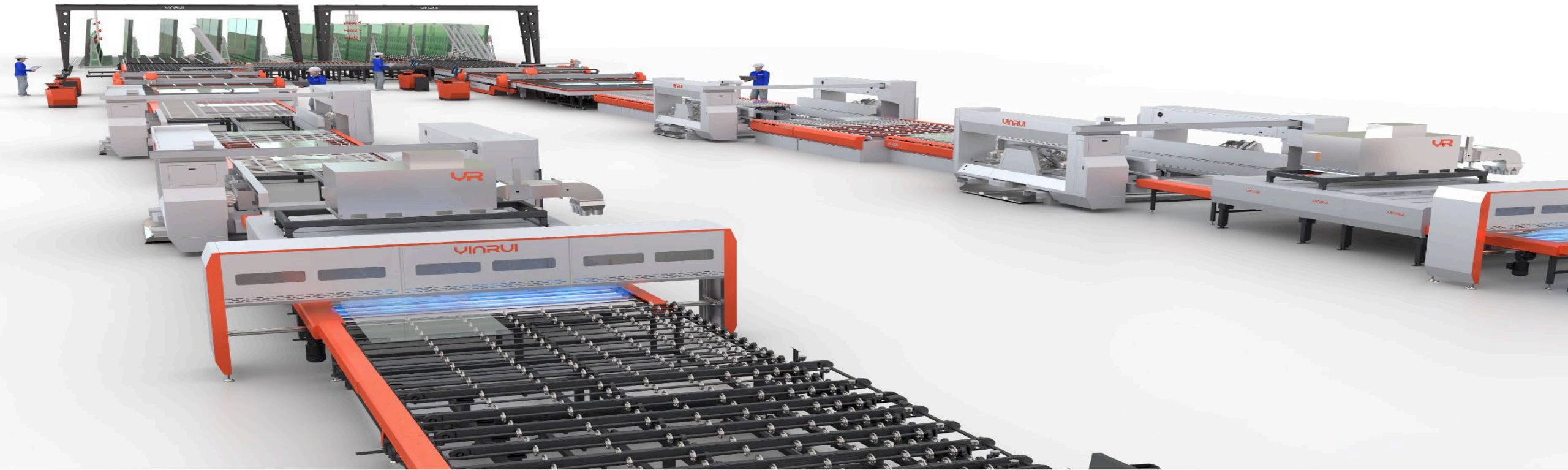
AUTOMOTIVE GLASS
汽车玻璃

HOME APPLIANCE GLASS
家电玻璃

Anthony Laser Marking Series



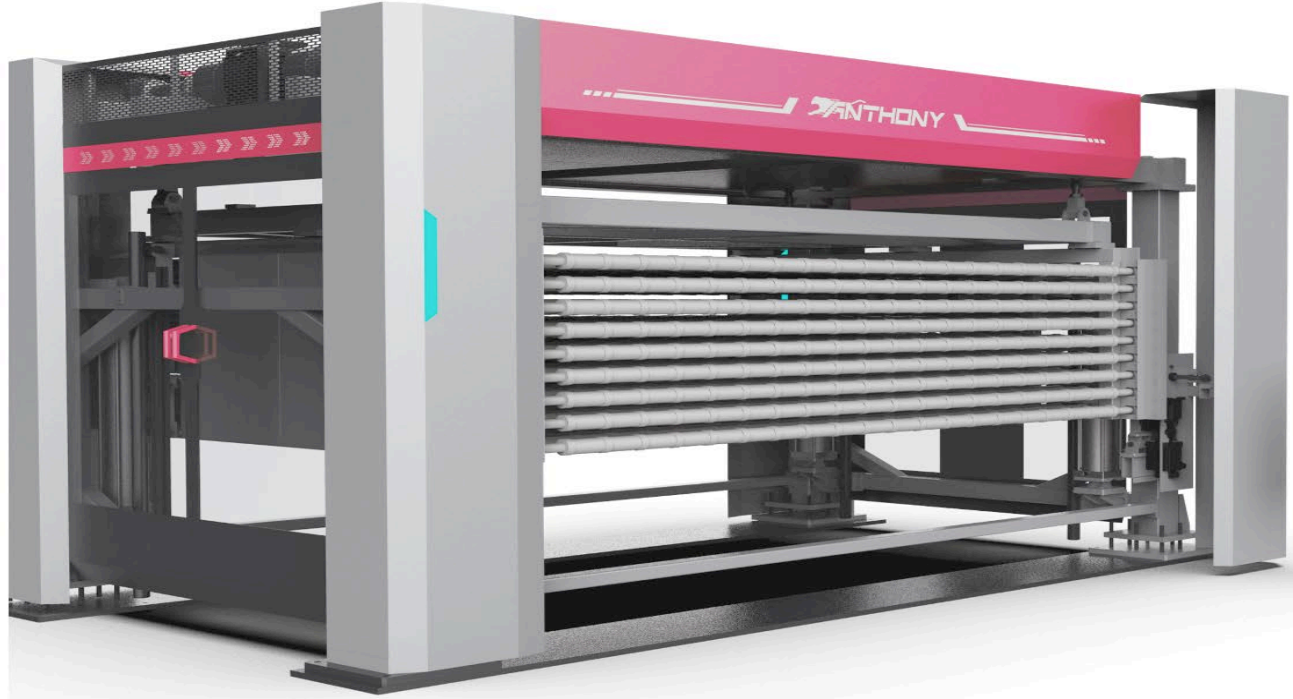
Defect Detection System



Vertical Sorting System



Horizontal Sorting System



Smart Factory Technologies

At the heart of this transformation is the seamless integration of four core technologies:

- **ERP:** Enterprise Resource Planning
- **MES:** Manufacturing Execution System
- **CNC:** Computer Numerical Control
- **SCADA:** Supervisory Control and Data Acquisition

ERP – The Business Command Center

ERP (Enterprise Resource Planning) integrates core business functions — sales, quoting, procurement, inventory, finance, and planning — into one unified platform. When tightly connected with MES and SCADA, it receives live shop-floor data to dynamically adjust schedules, factor in maintenance needs, and provide accurate, real-time lead times. This eliminates information silos and empowers data-driven decision making at the executive level.

MES – The Orchestrator of Production

MES (Manufacturing Execution System) is the real-time “brain” on the shop floor. It manages, monitors, and optimizes every production activity, bridging high-level planning (ERP) with actual execution. In glass fabrication, MES dynamically routes individual lites through cutting, edging, washing, tempering, insulating, and sorting. It optimizes furnace bed utilization, tracks quality and defects, monitors Overall Equipment Effectiveness (OEE), and provides full traceability using laser-based QR codes. The result is dramatically reduced errors, minimal staffing requirements, lower waste, and predictive maintenance.

CNC – Precision at the Cutting Edge

CNC (Computer Numerical Control) machines are the skilled hands of the operation. Designs created in CAD software are converted into numerical code that guides diamond wheels, drills, and waterjets with exceptional accuracy. These machines handle everything from straight cuts and complex shapes to holes, notches, and polished edges. In a smart factory, CNC equipment receives jobs automatically from the MES and sends real-time quality data back into the system, minimizing waste and maximizing precision — especially important as glass sizes continue to increase.

SCADA – Real-Time Monitoring and Control

SCADA (Supervisory Control and Data Acquisition) serves as the nervous system of the factory. It continuously monitors critical parameters such as tempering furnace temperatures, conveyor speeds, equipment status, and polishing performance. Through centralized dashboards, operators (and automated systems) gain immediate visibility, enabling faster responses to issues, predictive maintenance, maximized uptime, and improved energy efficiency.

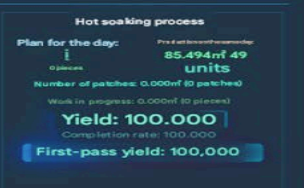
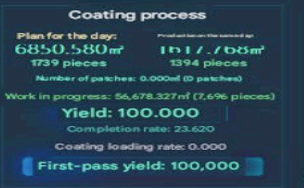
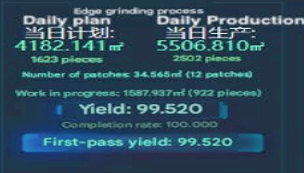
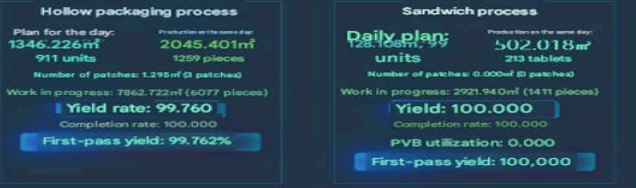
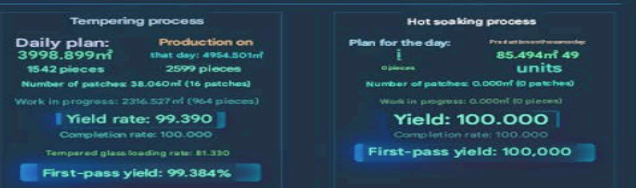
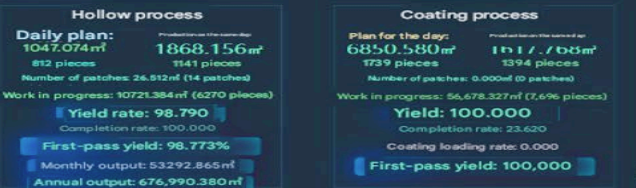
The Power of Integration

The true advantage of today's smart factories lies not just in automation, but in the depth of system integration. Data flows bidirectionally: ERP sends orders to the MES → MES schedules and routes → SCADA and CNC execute and monitor → feedback loops update all systems in real time. This creates a responsive, self-optimizing environment that delivers cleaner, safer, more efficient, and far less labor-intensive operations.

Real Time Productivity and Power Consumption

Digital Workshop — Data Overview

Planned quantity and completed quantity for each process

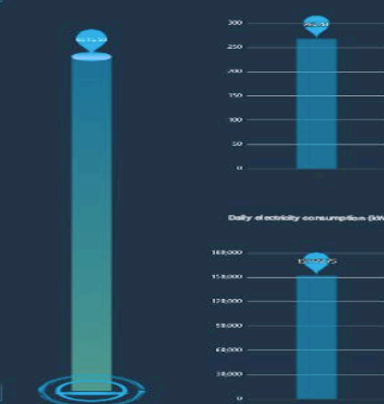


Deadline: 2024/6/14 10:29:09

Number of orders: 38,743



Daily film usage (m²)



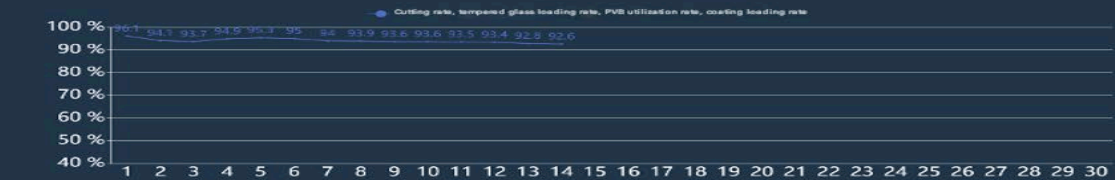
Daily water consumption (t)



Weekly output comparison of slicing process



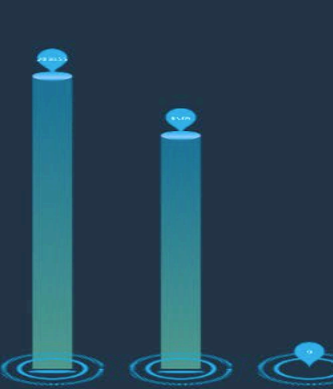
Efficiency indicators for the month



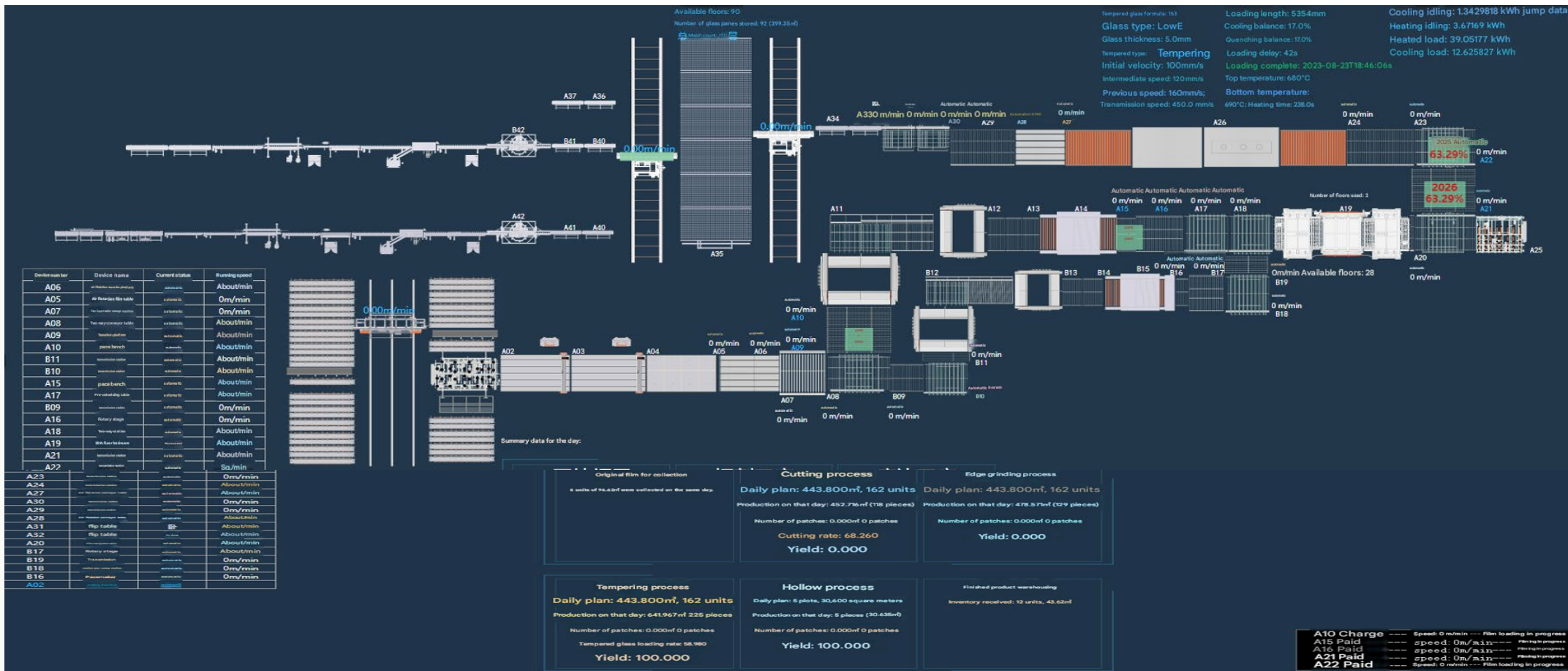
Daily process power consumption and power consumption per square meter



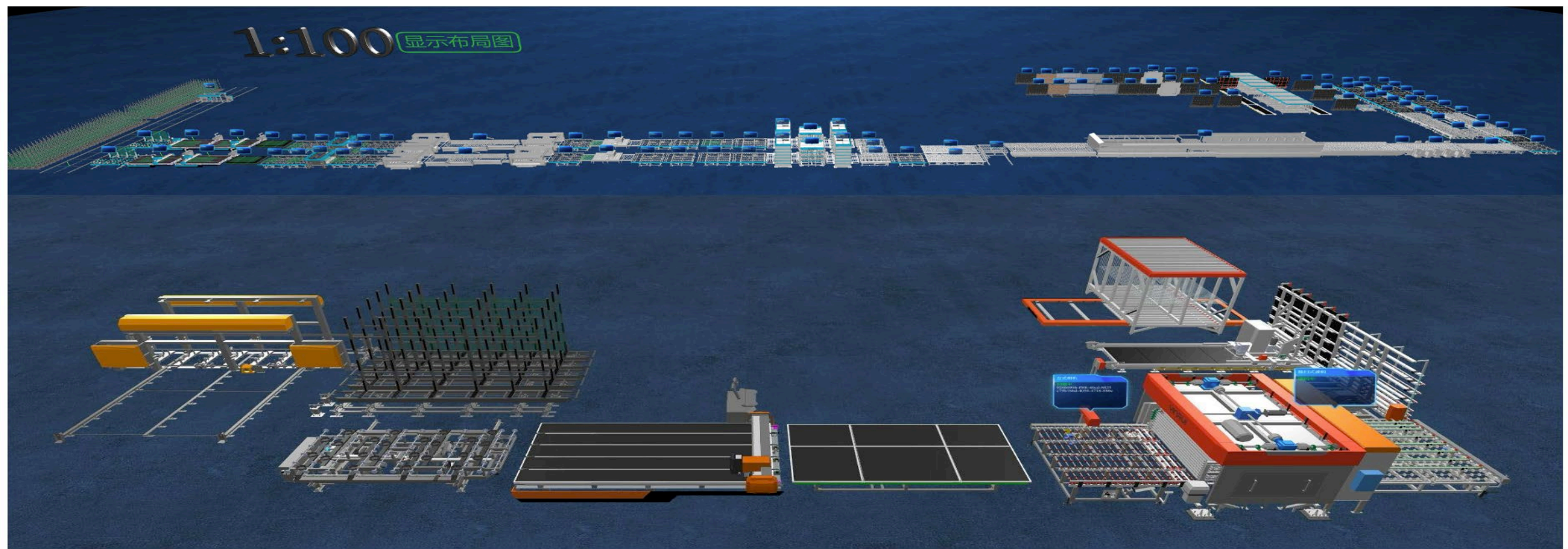
Daily finished product boxed quantity (m²)



Plant Overview



3D Image of Plant



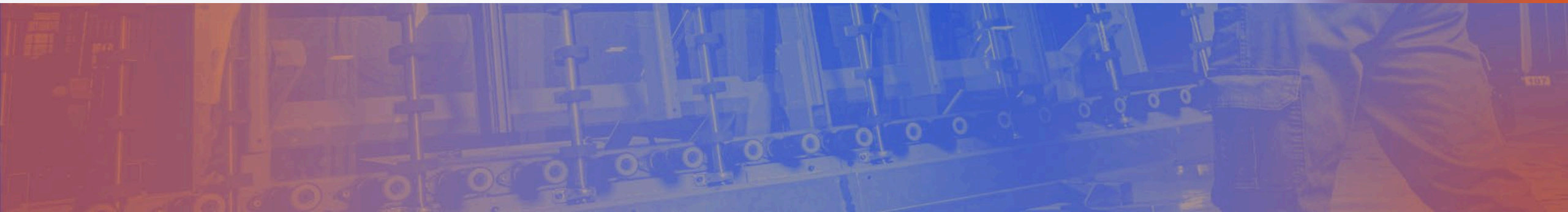
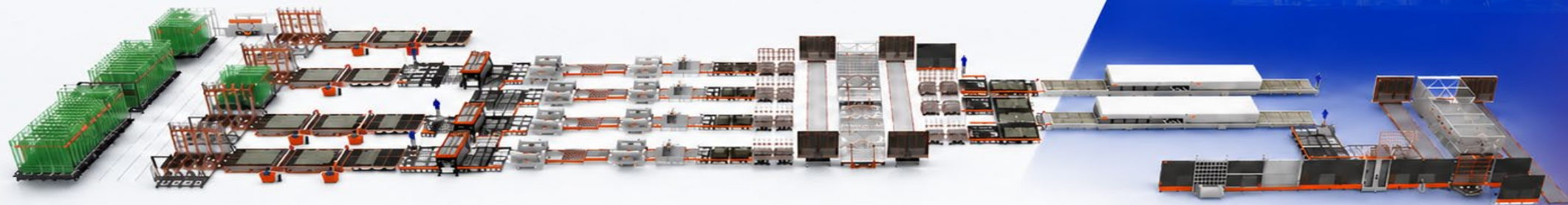


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THANK YOU





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