Vanstron
electronic assembly & traceability

VBH-series

In-line Vertical Buffer drying system

Why
we need a inline Vertical buffer drying oven?

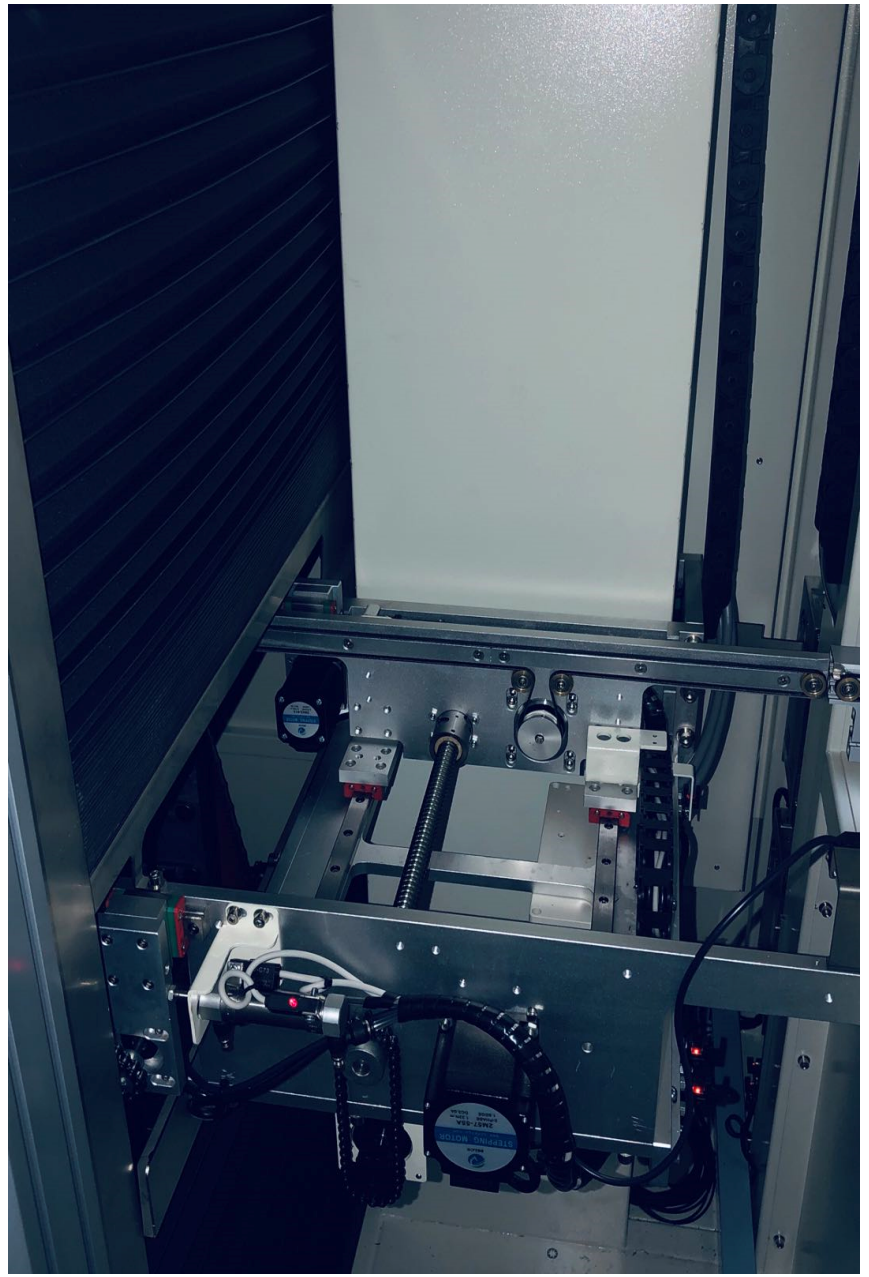
In-line, vertical automation of the epoxy cure process produces immediate, significant benefits in three areas:

1.In-line automation increases productivity by eliminating the labor needed to load and unload batch ovens.

2.It improves process consistency, and therefore quality, by reducing the time and temperature variations caused by the frequent opening of batch oven doors.

3.And, as floor allocation costs rise on all factory floors... and particularly in clean rooms... a vertical format oven requires as little as 2.8$m^2$of floor space for cure cycles for a long time;

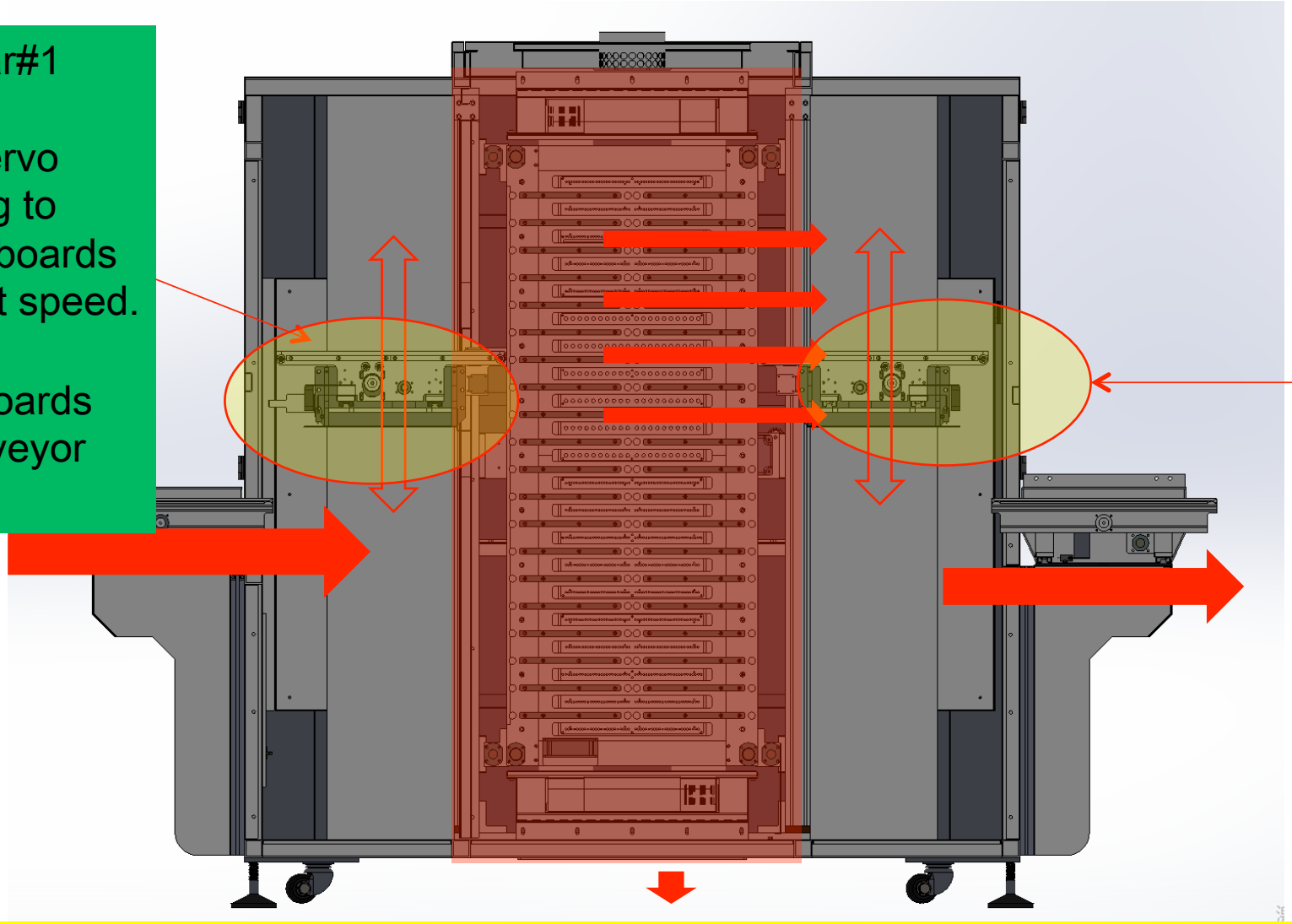
4. Good for Back End Semiconductor and PCB curing an underfill process;



Vertical transportation system

Shuttle lifting car#1

1. Using the servo motor driving to transfer the boards in a very fast speed.
2. Infeed the boards into the conveyor slots.



Shuttle lifting car#2

1. Using the servo motor driving to transfer the boards in a very fast speed.
2. pick up the boards from the rack slots and deliver it to the downstream.

Oven heating zone with forced convection air flow. It is built in with the high temperature resistance conveyor slots system. When the boards stayed in the oven for a specified time, after the time reached, the conveyor system will release the boards / pallet to the shuttle lifting car.

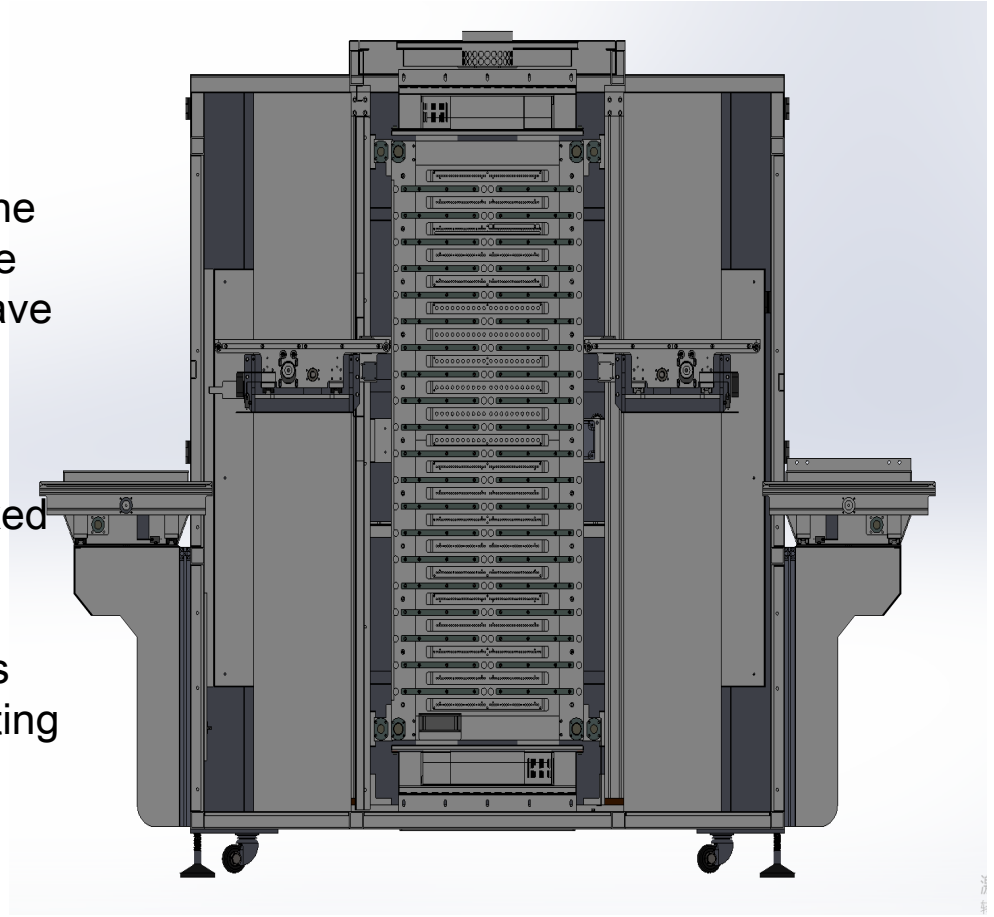
Vertical transportation system

The Vertical buffer oven System not only offers ideal drying and hardening processes, it is also extremely compact
and space-saving thanks to its design. As a result of the vertical transport, the systems replaces, with a system length of only around 2.35 m, a comparable 40 m long horizontal furnace. With the innovative system design, you can save valuable space in your production hall.

Two transport variants are available for the vertical dryer:

1. fixed transport width, where the circulating goods carriers are set to a fixed measurement

2. flexible transport width, where the transport by means of circulating goods carriers is automatically set to the respective circuit board size Several painting lines can thus feed different products with different circuit board transport widths in the mix to the system. With the vertical buffer oven, printed circuit boards with a **maximum height of 50 mm can be dried.**

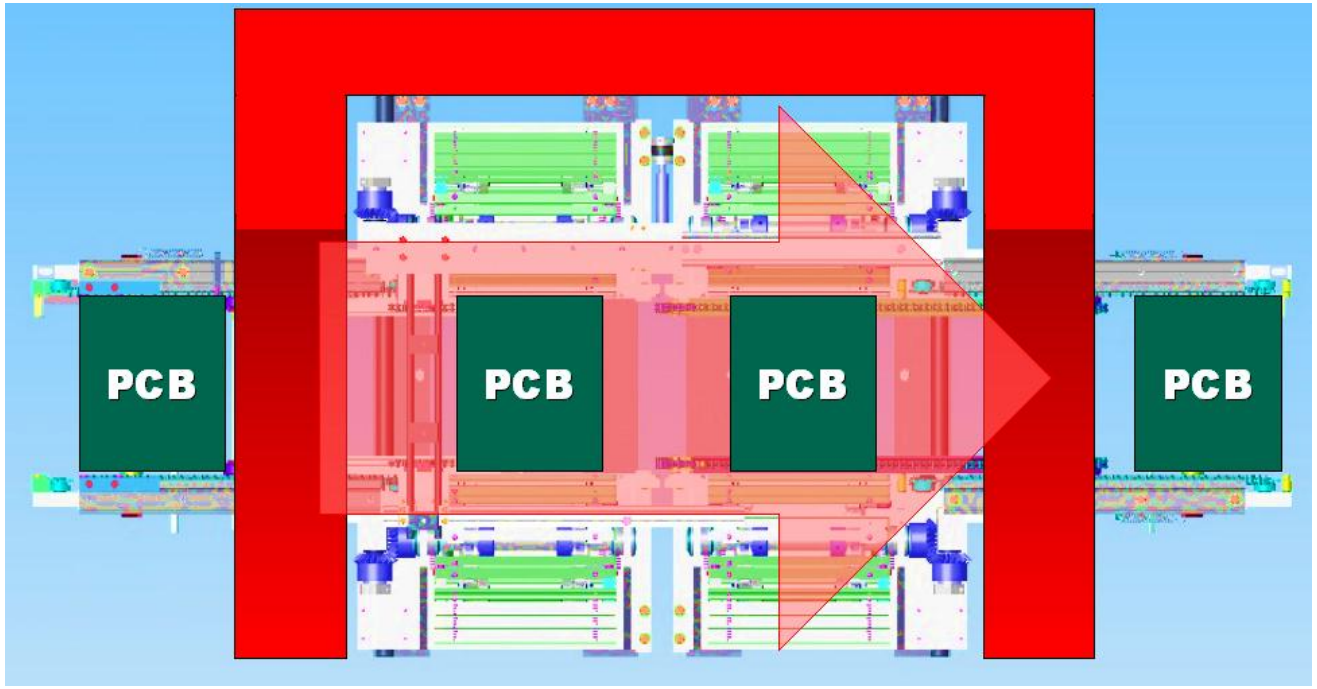


VBH-series vertical buffer drying oven transportation system

Board Handling Dimension
•Min Width: 65mm
•Max Width: 250mm
•Length: Max.320mm
•Shelf Pitch: 100mm
•Total carriage: 40 boards
(or customized according to the cycle time.)
Boards surface component height: top 25mm+ down 35 mm)

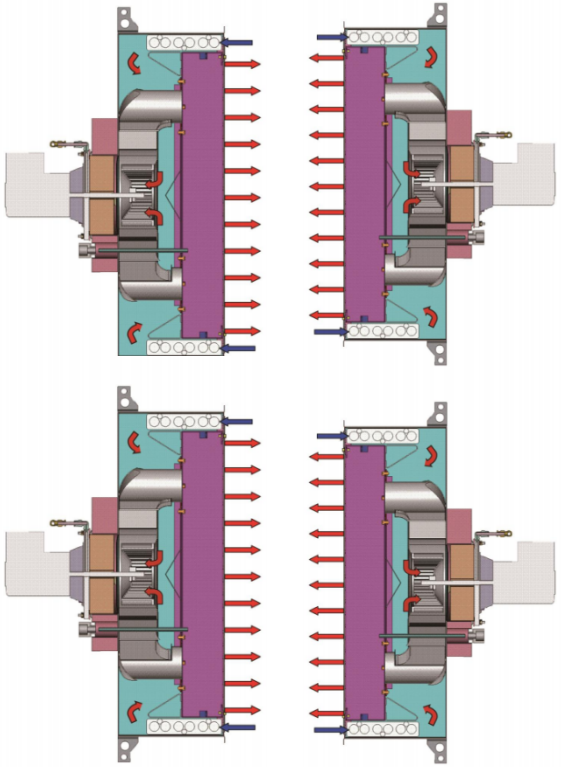
Circulating transport system

The circuit boards are loaded into goods carriers or without carriers at the furnace infeed. These run through the drying process in the system in a vertical direction and are stacked on top of each other during the hardening process.



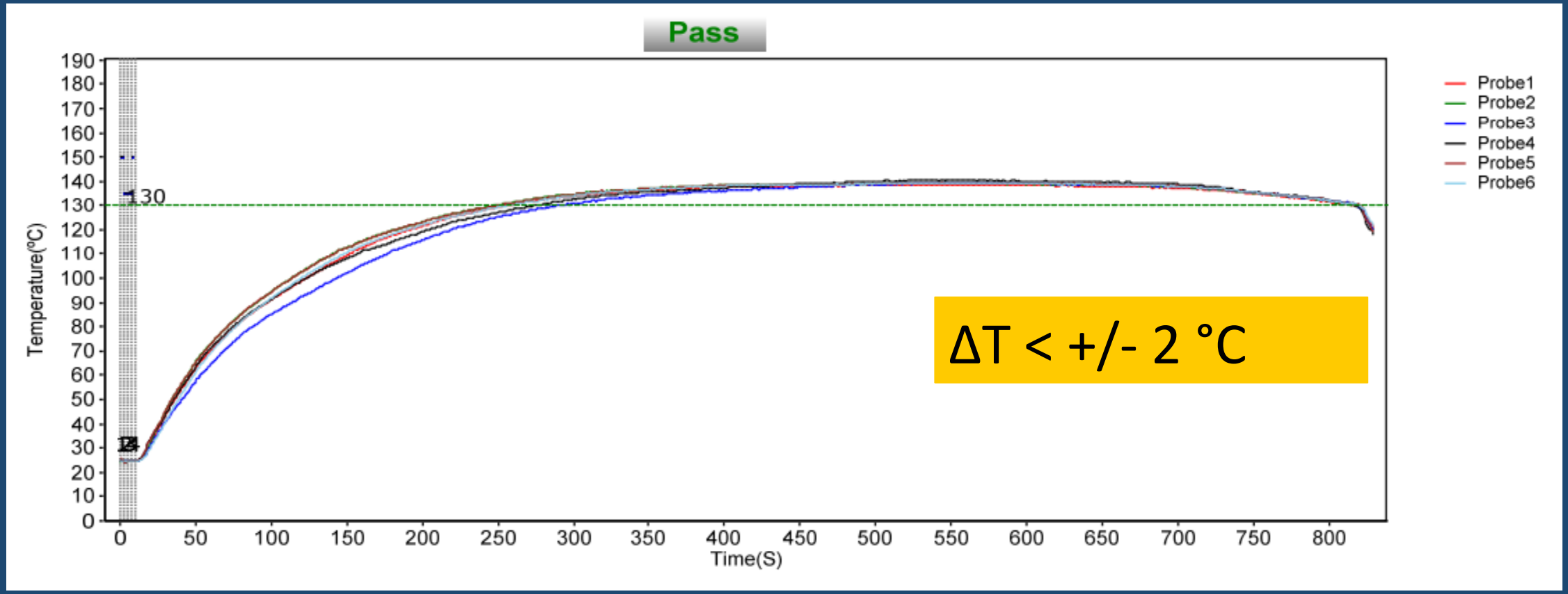
Boards Flow

Air convection system



- Return Air Flow returns into module through side suction holes and Outlet holes in grill are for convection gas flow only. All this improve our temperature stays constantly stable in the oven chamber and allows a good temperature uniformity.

- Independent air velocity controlling system allows flexible processing control to easily handle complicated curing and drying process.



- Provide Maximum heat capacity to rapidly reach temperature setting points at low rates of power consumption within a short period of time. The special process chamber design makes the air convection uniformly and temperature profile changeover easily.

- Profile spikes per zone is eliminated with better zone segregation and decrease cross flow. The nozzle plate design allow to cover the boards with hot air in all direction for good uniformity.

Electrical system

CE certificates support:

Japanese PLC, AB American controller, Schneider switch, Panasonic motor, Carlo Gavazzi relay,etc;

Easily maintenance

The doors of the process towers can be totally opened when to do the maintenance.

The electronic switching cabinet at the bottom of the system with CE-compliant, transparent design and a separate performance/control part is also freely accessible.

HCZ series Curing system

Items	Description	Remark
machine dimension (L*W*H)	L 2350*W1361*H1937mm	
Weights	Approx.1200KG	
Heating zone	Total 4 modular	
Air exhaust	832CFM / min channel Exhausts	
Control system		
Voltage	3P5L 380V 50/60Hz /	
Power consumption	Around 5.5KW	
Rate Power	12KW	
Warming up time	Approx*.10minute	
Temperature setting	Room temperature ---90^{0}C	
Temp. control	PID+SSR	
Temperature control accuracy	±1.0^{0}C	
Temperature distribution on PCB	±2.0^{0}C(by Vanstron Board Test Standard)	
Abnormal alarm	Temperature abnormal alarm, conveyor abnormal alarm, board tracing function	
Dropped board alarm	Light tower and buzzing	
Communication	SMEMA interface	
Conveyor system		
Conveyor structure	Min Width: 65mm; Max Width: 250mm	
PCB size range	Length: Max.320mm	
PCB buffer capability	Total 40PCS or specified	
Boards surface clearance	Top 25mm and down35mm	
Conveyor direction	Vertical transportation	
Inlet/outlet conveyor heights	930mm	
Conveyor speed	MAX 2000mm/min	
Communication method	SMEMA interface	

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The End ， thank you!

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