

Vertical Furnaces Reference Guide

# Scallable Vertical Furnace for R&D or Production

Two-boat rotating system Automatic wafer handling system for loading wafers from SMIF or FOUP closed pods Quartz or SiC boats can be used

Highly tailored state of the art modular control system, in house designed and manufactured

10,4" high-res touchscreen for operator interface

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Special automatic loading system which allows loading wafers from open cassettes and provides an exceptionally small footprint



### Production | R&D



#### Processes

Atmospheric

- Diffusion (drive-in) high temperature processes
- Doping from solid, liquid and gaseous dopant sources e.g. BBr<sub>3</sub>, B<sub>2</sub>H<sub>6</sub>, POCL<sub>3</sub>, PH<sub>3</sub>, BN
- Dry Oxide
- Pyrogenic Wet Oxide with External Burning System
- Various thermal processing e.g. annealing, sintering

#### LPCVD

- Silicon nitride / low stress nitride
- **O**xynitride
- High temperature oxide (HTO)
- Low temperature oxide (LTO)
- Polysilicon, both with tilt and flat temperature profile
- Doped polysilicon
- TEOS oxide

DCE or HCl optional for all processes

#### Technical Data

| Wafer size (mm)  | 100, 150, 200, 300 or any custom size         |
|--|---|
| Wafer load   | 25 – 150 wafers/batch                         |
| Heating system   | 3 or 5 zone                                   |
| Flat zone  | Up to 600 mm (24")                            |
| Process temperature  | 200°C to 1230°C, ± 0.5 °C across flat zone    |
| Power consumption  | 22kW - 30kW                                   |
| Power supply<br>(adapted to power grid of destination country) | 3-phase, 400 or 480VAC, 40 – 100A, 50 or 60Hz |
| Clean dry air  | 70 – 110 psig (4,8 to 7,6 bar)                |
| Cooling water  | 10 – 15 LPM                                   |
| Exhaust  | 170m³/h                                       |

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#### Drawings (mm)



Production | R&D







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Optional External Burn System or Hydrogen Burn Off

Optional LPCVD Vacuum Assembly

#### Production | R&D



- Vertical Furnace 2-3
- Drawings, variants Block diagram 4-5
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# Vertical Furnaces



Front-end Semiconductor equipment from the Heart of Europe | svcs.com