

AS-ONE

Rapid Thermal Processing Furnace 4 and 6-inch version, up to 1500°C



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APPLICATIONS

- RTA (Rapid Thermal Annealing)
- RTO (Rapid Thermal Oxidation)
- Diffusion
- Compound semiconductor annealing
- Nitridation, Silicidation
- Crystallization and Densification

SPECIFICATIONS

4-inch (100 mm) and 6-inch (150 mm) wafer capability
Floor standing system for reduced footprint
High reliability and low cost of ownership

Stainless steel cold wall chamber technology:
High process reproducibility
Ultra clean and contamination-free environment
High cooling rates and low memory effect

Pyrometer and thermocouple control
Fast digital PID temperature controller

Edge pyrometer viewport insures enhanced temperature control of the susceptor for compound semiconductors and small samples.

A high vacuum version (10^{-6} mbar) is available

PERFORMANCE CHARACTERISTICS

- Temperature range: RT to 1500°C ($\pm 1^\circ\text{C}$)
- Ramp rate up to 200°C/s (4") - 150°C/s (6")
- Gas mixing capability with mass flow controllers
- Vacuum range: Atmosphere to 10^{-6} Torr

AS-ONE

General features

| | |
|----------------------------|--|
| Maximum substrate diameter | 4-inch or 6-inch |
| Process chamber | Water-cooled stainless steel with quartz window Low volume of the process chamber |
| Heating | Infrared tubular halogen lamp furnace Silent fan lamp air-cooling |
| Temperature control | Thermocouple temperature control Optical pyrometer control (2 positions) Fast digital PID temperature controller Optional additional pyrometer |
| Vacuum and gas | Purge gas line with needle valve Up to 5 process gas lines with digital mass flow controllers Vacuum valve Vacuum gauge Optional vacuum rotary or dry pump Optional turbo pump Optional pressure control with throttle valve |
| Control | Full PC control, up to 100 steps per recipe Ethernet connection to PC for fast control and data logging Wafer traceability and process historicals |
| Facilities | Electricity: 3x400V+N+Gr or 3x220V+Gr, 50/60 Hz Power: 30kW (4-inch system), 34 kW (6-inch system) Water: 2 to 6 bars, pressure drop 1 bar, 12 l/mn Compressed air: 6 bars (valve actuation) Process gas fittings: Swagelok ¼ (VCR optional) |
| Dimensions and weight | Width: 510 mm, Depth: 800 mm, Height: 1425 mm Weight: 194 kg (4-inch system), 240 kg (6-inch system) |

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