

AS-ONE

Rapid Thermal Processing Furnace 4 and 6-inch low cost system



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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 and 6-inch 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

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

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.

PERFORMANCE CHARACTERISTICS

- Temperature range: RT to 1250°C ($\pm 1^\circ\text{C}$)
- Ramp rate up to 200°C/s (4-inch) / 150°C/s (6-inch)
- Gas mixing capability with mass flow controllers
- Vacuum range: Atmosphere to 10^{-6} Torr

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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