



JETFIRST Series

Bench Top RTP System 100/200-mm

Semiconductor & Photovoltaics

Versatile and cost-effective software-controlled bench top-type rapid thermal processing (RTP) tool specifically designed to meet the requirements of R&D laboratories and small-scale production units.

The SEMCO JETFIRST system has been developed to meet the requirements of universities and research laboratories. The temperature measurement control system provides accurate and repeatable thermal control across the temperature range. The lamp array, upper flange, and quartz window are mounted in a rotating top lid, giving full access to the chamber for easy loading and unloading of the wafer.

Silicon Carbide coated graphite susceptors are available for processing of various small samples and compound semi materials. A spare process chamber can be provided upon request to avoid cross contamination if several processes have to be performed in the same reactor. The high reliability and high performance characteristics of the JETFIRST enable small-scale production.

The process can take place at atmospheric pressure or under vacuum. A PID system provides accurate and repeatable thermal control across the temperature range. RTP process control is through a PC computer (provided) running PIMS dedicated supervisor that enables recipe programming and monitoring of the entire RTP system.

Key Features

- Software-controlled stand-alone single-chamber reactor
- Cold-wall design for process reproducibility
- Multi-zone halogen lamp heater
- Substrate size up to 200-mm diameter
- Up to three (3) MFC-controlled gas introduction lines
- Atmospheric and high-vacuum process capabilities
- Square chamber available for solar applications
- Ideal for process development & small-scale production

Processing Capabilities

- Rapid thermal annealing | RTA
- Implant monitoring
- Rapid thermal oxidation | RTO
- Rapid thermal nitridation | RTN
- Rapid thermal diffusion | RTD - e.g. Spin-on Dopant
- Crystallization, carbonization
- Contact alloying
- Selenization (with optional hardware)



Specifications

Model JETFIRST

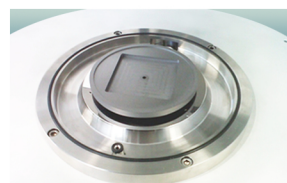
Substrate

Dimension Pieces of wafer to 200-mm circular
Thickness Up to 5 mm

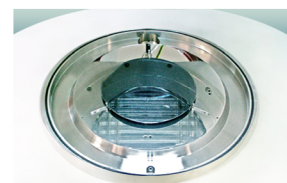
RTP Module

Reactor technology Water-cooled metal chamber
RTP heating system Crossed-lamp IR technology
Installed power 34 kW
Temperature range RT to 1200°C
Temperature uniformity (typical) ± 1°C
Ramp rate 1°C/s to 200°C/s
Temperature control TCs, pyrometer & digital PID
Cooling Fan & water-cooled reflector
Loading method Manual pick and place through lid
Control system PLC and Software on PC
Waste abatement Dry vacuum pump
System footprint (LxWxH) 850x750x675 mm

SEMCO JETFIRST can be connected and monitored through IP/Ethernet networks to allow users sharing their process experience with our RTP engineers and directly benefit from the SEMCO's expertise in advanced applications.



SIC susceptor for Selenization of TFPV



2" wafer free standing on quartz pins