

Rapid Thermal Annealing system, RVR-2100

I 1 set Process Vacuum Chamber Unit

- Chamber Door
 - . Material : SUS304
 - . Substrate heating unit mount port
- Chamber Body
 - . Material : SUS304
 - . external water cooling line
 - . View port and shutter
- Vacuum pumping adaptor
 - . SUS304
 - . Port : pumping, vent, gas, gauge etc.

II 1 set Vacuum pumping and manual pressure control unit

- Process oil rotary pump : 1 ea
 - . Pumping speed : 400 l/m 이상
- Isolation valves (roughing)
 - . Pneumatic, position sensor
- Vent valve, 1/4" on/off
- Vacuum gauge sensor
 - . One low vacuum sensor with cable, pirani type
- Manual pressure control module
 - . Manual throttle valve, NW40

III 1 set Substrate heating and cooling module

- Substrate holder, SiC coatd graphite, piece to 2 inch dia. Sample mountable
- Substrate heating stage
 - Heating element : Halogen lamp
 - Temp. sensor : K-type thermocouple
 - DC power supply with PID programmable temp. controller
 - . Max.output power : 110V, 20A / 16 segment
- Substrate cooling stage
 - . SUS304, internal water cooling line
- Substrate up-down module
 - . Linear motion feedthru, pneumatic
 - . Substrate holder up-down pin, ceramic

IV 1 set Process gas control unit (Ar,N2)

- Mass flow controller : 2 ea
 - . N2, Ar

- MFC readout and power supply
- Gas valve, bellows type, 1/4" VCR, pneumatic
- Gas line, 1/4" SUS tube, VCR fitting
- Chamber vent valve, solenoid, 1/4" lok

V 1 set Frame & system control module

- Chamber housing frame
 - . Material : SS41 or Al profile
 - . Frame door, Caster and foot
- Caninet rack
 - . Standard 19 inch, caster and foot
- System controller
 - . Industrial PC LCD monitor
 - . PLC module
 - . Emergency stop push button switch
- Electric apparatus panel
- Cooling water distribution device
- Compress air distribution module
 - . Solenoid valves, regulator

< System Performance >

- Ultimate pressure : below than 5×10^{-3} torr
- Temp. uniformity : within $\pm 2^{\circ}\text{C}$ @ 800°C
- Temp. heating speed : 50°C/s 이상
- Substrate cooling speed : 1,000도에서 20도 까지 20°C/s 이상

< System required utilities >

- Electric power : 220V, 3P, 30A
- Cooling water : Under 20°C , 1~2 kgf/cm², 20 l/m, 1/2" SUS tube
- Compressed air : 5 ~ 6 kgf/cm², 100 l/m, 6mm one touch fitting
- Exhaust : regular exhaust, 32mm flexible tube
- Vent gas : N₂, over than 99.9%, 1 ~ 2 kgf/cm², 1/4" lok fitting