

3. System Specifications

3.1 Reaction Chamber

Chamber: Aluminum, Exterior = 400(W) x 400(D) x 170(H) mm
Inner diameter 340mm
40mm diameter viewport x 2
Chamber lid opens and closes automatically

Electrodes Structure: Parallel plate
Cathode coupling
55mm fixed gap between electrodes

- * Upper electrode: Aluminum, 240mm diameter
- * Lower electrode: Aluminum, 240mm diameter
Ground shield and substrate water cooling jacket included
Anti-sputter quartz cover (250 mm)
Ground shield

Gas inlet: Shower type manifold



The reaction chamber is made of aluminum, and is not compatible with use of corrosive gases.



3.2 RF Generator

RF power:	13.56 MHz, Max. 300 Watts Crystal oscillation, all solid-state
Matching circuit:	Automatic impedance matching
Power meter:	Digital display, reads forward and reflected power.
Output time control:	Timer setting (touch panel) is used to control output.

● 3.3 Vacuum System

Vacuum Line (Direct Pumping):	
Compound turbomolecular pump:	200 N2 liters/sec. Compound turbomolecular type/air cooled N2 purge line/N2 automatic leak line
Backup rotary pump:	208/250 liters/min. (50/60) Hz Gas ballast, N2 dilution line, automatic leak line
Pressure control:	4" automatic pressure control valve (gate valve type) (Evacuation conductance control / motor driven) Coupled with pneumatic angle valve

3.4 Vacuum Gauges

Diaphragm gauge:	2.66E+02 to 1.33 Pa Includes isolation valve Interconnected with the APC
Full range gauge:	Near atmospheric pressure to 1.0E-07 Pa Includes isolation valve

i NOTE

*This machine displays the vacuum pressure level in pascal (Pa).
[1 Pa = 7.5 mTorr] [1 Torr = 133 Pa]*

3.5 Gas Inlet Lines

MFC for Process Gases: 2 lines

The MFC are calibrated with nitrogen gas.
The MFC are equipped with a conversion function that compensates for the gas selected by the operator.

Gas inlet valves:	Bellows seal pneumatic valves
Gas line tubing:	SUS 316L
Gas line fittings:	1/4 inch welded VCR (Only for etching process gases)

3.6 System Control

- Interface: System start-up, shutdown, and processing can all be performed automatically using the sequence controller, or manually using the touch panel screen.
- Display: EL touch panel
- Recipe management: Parameter settings are entered and stored using the touch panel screen.
- Recipe Settings: Each recipe has a capacity of up to 4 process steps.
By selecting a recipe, the user can automatically execute the number of steps in the recipe (max. 4 steps).
- Up to 10 process recipes can be created and stored in the computer.



5. Facility Requirements

Power supply: 380V, 3 phase, 15A

Ground: Type D ground

Compressed air:

** Supply pressure: 0.5 - 0.7 MPa
 Fittings: 1/4 inch Swagelok x 1

Main unit cooling water:

Supply pressure: 0.1 - 0.2 MPa
 Fittings: Rc 1/4 inch (both IN/OUT sides)
 Flow rate: Min. 2L/min.
 ** Please use water with lower electrical conductivity than tap water

Process Gases:

Supply pressure: 0.1 MPa
 Fittings: 1/4 inch VCR

Pump N₂ Purge Gas:

Supply pressure: 0.24 - 0.79 MPa
 Fittings: 1/4 inch Swagelok x 1
 Flow rate: appx. 20L/min.

Pump Evacuation Duct: NW 25 x location

Other considerations: In addition to the system dimensions noted above, leave space of about 750mm on each side of the system to provide for maintenance activities and ventilation.

Do not install the machine in a location where it will be exposed to high temperatures, high humidity, high particle levels, or highly corrosive chemicals such as hydrofluoric acid.

Ignoring this warning may result in damage to the machine.