SAMCO’s RIE-10NR™ is a low-cost, high-performance, fully automatic, dry etching system which meets the most demanding process requirements for fluorine chemistries. A computerized touch panel provides a user-friendly interface for parameter control and recipe storage. Etching is performed with minimum side-wall deterioration and a high selectivity between materials. With its sleek, compact design, the RIE-10NR requires minimal cleanroom space.

**FEATURES**

- Highly selective anisotropic etching meets demanding process requirements
- Fully automatic “one button” operation with full manual override
- Easy-to-use computerized touch panel for parameter control and recipe entry and storage
- Processes wafers up to 8” in diameter
- Sleek, compact design uses minimal cleanroom space

**APPLICATIONS**

- Anisotropic etching of all types of silicon based thin films, compound semiconductors and refractory metals including: Si, SiO₂, Poly-Si, Si₃N₄, GaAs and Mo
- Manufacturing micromachines
- Failure analysis
SPECIFICATIONS

PROCESS CHAMBER
- Aluminum, 340 mm diameter
- Two 40 mm diameter viewports for viewing plasma and wafer/substrate during processing

ELECTRODES
- Parallel plate, cathode coupling
- 55mm fixed gap between electrodes
  - Lower Electrode: Aluminum, 240 mm diameter, liquid-cooled
  - Anti-sputter quartz cover with 8” recess (Ø250mm)
  - Upper Electrode: Aluminum, 240 mm diameter, shower head

SUBSTRATE SIZE
- Up to 200 mm in diameter

RF POWER
- 13.56 MHz, 300 W solid state generator
- Automatic impedance matching

VACUUM SYSTEM
- Chemical series, compound turbo molecular
  - 200 liters/second
- Chemical series, 2-stage backing/roughing pump, 250 liters/min., with nitrogen gas ballast and exhaust line purge
- Automatic closed-loop pressure control via motorized gate valve

PRESSURE MEASUREMENT
- Full range gauge, 5 x 10⁻⁷~10⁻⁵ Pa, (base pressure)
- Capacitance manometer, 2.66 x 10⁻²~2.66 x 10² Pa, (process pressure)
- Atmospheric pressure sensor

GAS INLET LINES
- Two non-corrosive series mass flow controllers (up to six MFCs available)

OPERATION
- Fully automatic “one button” or completely manual operation
- Recipe storage via computerized touch panel (10 recipes total)
- Setpoint and process parameters displayed during process
- Four-step sequential process recipes

FLOW SHEET
- MFC 1-2: Mass flow controllers
- GV 1-2: Gas inlet valves
- LV: Leak valve
- BV 1-2: Evacuation valves
- ISOV 1-2: Isolation valves
- CM: Capacitance manometer
- FRG: Full range gauge
- TMP: Compound turbo molecular pump
- RP: Rotary pump
- AM: Automatic impedance matching unit
- RFG: Radio frequency generator
- APC: Automatic pressure controller

UTILITIES REQUIREMENTS
- Power: 200 VAC, 3 phase, 20 A
- Process Gases: 0.1 MPa (G)
- Nitrogen Purge: 0.1 MPa (G), 12 liters/min.
- Compressed air: 0.5-0.7 MPa (G), filtered
- Cooling Water: 0.3-0.5 MPa (G), 2-3 liters/min.
- Exhaust Duct: For backing/roughing pump effluent, NW 25

DIMENSIONS
- Main Unit: 500 x 920 x 1510 mm
- Pump: 522 x 163 x 216 mm

OPTIONS
- Additional gas lines
- End point detection system
- Exhaust gas treatment unit
- Dry backing/roughing pump

Specifications subject to change without notice.

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